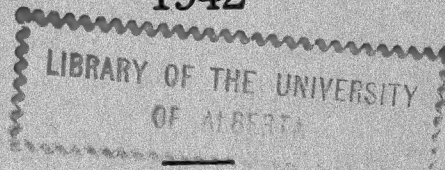


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ANNUAL REPORT
OF THE
DEPARTMENT OF AGRICULTURE
OF THE
PROVINCE OF ALBERTA
FOR THE YEAR
1942



PUBLISHED BY ORDER OF THE LEGISLATIVE ASSEMBLY



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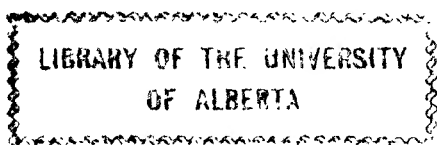
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TO HIS HONOUR,
J. C. BOWEN,
Lieutenant Governor of the Province of Alberta.

SIR:

I have the honour to submit herewith the Report of the Department of Agriculture for the year 1942.

I have the honour to be, Sir,
Your obedient servant,
D. B. MACMILLAN,
Minister of Agriculture.

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DEPARTMENT OF AGRICULTURE
1942

HON. D. B. MACMILLAN, *Minister of Agriculture*

Heads of Branches

O. S. Longman, Deputy Minister and Superintendent of Schools of Agriculture.
A. M. Wilson, Field Crops Commissioner.
A. A. Campell, Acting Live Stock Commissioner.
P. R. Talbot, Provincial Veterinarian.
D. H. McCallum, Dairy Commissioner.
C. W. Traves, Poultry Commissioner.
T. Lloyd Jones, Animal Pathologist.
W. G. le Maistre, Provincial Apiarist.
R. M. Putnam, Director of Extension Service.
S. H. Gandier, Supervisor of Junior Activities.
E. B. Swindlehurst, Acting Supervisor of Relief Settlement.
James Murray, Principal, School of Agriculture, Olds.

REPORT OF THE DEPUTY MINISTER

(O. S. LONGMAN)

THE HONOURABLE D. B. MACMILLAN,
Minister of Agriculture.

SIR:

I have the honour to submit herewith the thirty-sixth annual report covering the activities of the Alberta Department of Agriculture for the year 1942.

During the crop year an all-high yield of farm crops has been recorded. Rains were frequent and province-wide. Harvesting and threshing were delayed due to unfavourable weather and shortage of labour. It is estimated that approximately 15% of the crop remains unharvested or unthreshed.

The total acreage of Alberta field crops is estimated at 13,625,800 acres compared with 12,885,600 acres in 1941, with an estimated value of \$231,568,000, compared with \$101,556,000 in 1941.

The value of all animals slaughtered and sold during the year is estimated at \$87,227,000, compared with \$65,478,000 in 1941. In the production of milk and dairy products there has been a substantial increase in volume with an estimated value of \$31,770,200, compared with \$27,376,800 in the previous year. Poultry produce has also increased in value to \$14,568,000, which is comparable to \$9,279,900 in 1941.

It is interesting to note that in 1942 the total of all animal products including animals slaughtered and sold, dairy products and wool, have an estimated value of \$134,813,300 as compared to \$231,568,000 for all field crops. Having regard for the limitations on marketings of the major grain crops, it becomes evident that from the disposal of animals and animal products the farmer obtains the larger part of his income. Estimated cash income from the sale of field crops in 1942 was \$58,389,000, while from the sale of live stock and live stock products it amounted to \$111,105,000. There is appended hereto a comparative statement for 1941 (revised) and 1942 (estimated) production, which reveals in detail the production and values of the various agricultural commodities produced in the Province of Alberta.

While the agricultural production in Alberta has reached an unprecedented level, this accomplishment has been achieved in spite of the many difficulties created by the prosecution of the war. The Department, through its officers and field staff, has endeavoured to meet the major problems as they arose. In order to more effectively attain this objective, a Consultive Committee on Agriculture Services was appointed, the membership of which is composed of officials of the rural farm organizations (including women's organizations), the Municipal Districts Association and the University, along with representatives of the Provincial Department of Agriculture. The function of the Consultive Committee is to form a body with whom Departmental officials may consult with respect to services, problems and programmes that are of vital interest to the

farming community, and thereby unify and co-ordinate the efforts of all in attaining a common objective.

Exhaustion of farm manpower by enlistment in the armed forces and increased demand of war industries seriously affected agricultural production. In an endeavour to cope with this situation, the Department of Agriculture entered into an agreement with the Dominion Department of Labour whereby a farm labour service was organized for the purpose of recruiting and transporting farm labour. Under this arrangement, there were appointed ten farm labour supervisors.

During the year, the Schools of Agriculture were requested to assume greater responsibility with respect to the administration of Junior Clubs. It is believed that junior activities of the Department can be more effectively conducted by the Schools of Agriculture than by the various branches of the Department.

During the year a few changes in the senior members of the staff have occurred. The Field Crops Commissioner, Mr. O. S. Longman, assumed the duties of Deputy Minister. Mr. Wilson, M.Sc., was promoted from the staff of the Field Crops Branch to fill the vacancy thus created, and was succeeded by Mr. N. N. Bentley, formerly District Agriculturist for the Edmonton District. Mr. A. T. Sinclair, Crop Specialist of the Field Crops Branch, resigned to assume the managership of the Alberta Seed Growers' Association. The vacancy thus created was filled by the appointment of Mr. H. T. Mather, B.Sc., formerly of the staff of the Dominion Experimental Station, Lacombe.

In the course of the year, the Department of Agriculture has represented the Province at several Dominion-Provincial conferences of the Agricultural Supplies Board, Ottawa. At these conferences, agricultural production programmes have been planned to meet the demands for food of the civilian population and the armed forces, and to fill commitments which Canada has undertaken with her allies. The Department was also represented at a conference held by the Agricultural Reconstruction Committee for the consideration of plans for post-war reconstruction.

There is appended hereto detailed reports from the various branches of the Department of Agriculture, covering the activities which have been conducted throughout the year.

Yours respectfully,

O. S. LONGMAN,
Deputy Minister.

DEPARTMENT OF AGRICULTURE

GROSS VALUE OF AGRICULTURAL PRODUCTION (REVISED ESTIMATE FOR 1941--PRELIMINARY FIGURES FOR 1942)

PRODUCT	AREA		YIELD PER ACRE		TOTAL YIELD		PRICE		TOTAL VALUE	
	1941	1942	1941	1942	1941	1942	1941	1942	1941	1942
GRAIN CROPS:										
Wheat	6,481,000	6,370,000	Bus.	Bus.	Bus.	Bus.	\$	\$	\$	\$
Oats	2,799,000	3,284,000	53.3	27.9	97,000,000	178,000,000	.33	.64	48,500,000	113,920,000
Barley	1,543,000	1,925,000	18.1	53.3	63,800,000	175,000,000	.39	.22	21,054,000	56,000,000
Rye	160,000	215,000	20.5	39.0	28,000,000	75,000,000	.40	.38	10,920,000	31,500,000
Peas	9,000	16,000	15.0	19.0	1,360,000	4,400,000	2.00	1.78	744,000	1,672,000
Beans	2,000	2,300	13.0	11.7	26,000	27,000	1.80	2.20	270,000	541,000
Mixed Grains	50,000	73,000	18.0	36.9	900,000	2,694,000	.34	.37	47,000	59,000
Flaxseed	131,000	183,000	7.3	12.0	956,000	2,200,000	1.25	1.97	306,000	997,000
ROOT CROPS:										
Potatoes	30,000	28,500	Cwt.	Cwt.	Cwt.	Cwt.	1.03	1.10	2,009,000	2,979,000
Turnips, etc.	3,800	4,400	100.0	95.0	380,000	480,000	.60	.70	228,000	338,000
Sugar Beets	23,800	27,600	Tons	Tons	Tons	Tons	8.79	9.00	2,611,000	3,100,000
FODDER CROPS:										
Hay and Clover	465,000	463,000	Tons	Tons	Tons	Tons	6.50	6.50	3,933,000	5,116,000
Alfalfa	180,000	220,000	2.00	2.50	360,000	550,000	8.50	7.80	3,060,000	4,290,000
Fodder Corn	8,000	14,000	3.50	4.50	28,000	63,000	6.40	5.00	179,000	315,000
Grain Hay	1,000,000	800,000	1.30	2.00	1,300,000	1,600,000	5.00	4.50	6,500,000	7,200,000
Total Field Crops									101,556,000	231,568,000
LIVE STOCK (*):										
Horses	645,442	647,000	Number	Number	Number	Number	54.00	55.00	762,000	802,500
Cattle	941,450	1,040,800	12.800	13.300	12,800	13,300	56.00	73.50	22,511,000	28,391,400
Calves	403,590	423,200	95.101	92.579	292,083	281,278	19.60	24.50	2,312,000	2,741,000
Sheep and Lambs	702,451	828,000	213.832	207.035	1,501,101	1,736,200	7.30	8.80	1,736,200	2,149,600
Hogs	1,704,700	2,093,000	1,950,659	2,182,342	1,950,659	2,182,342	18.50	23.00	38,157,300	53,142,500
Total Live Stock									65,478,500	87,227,000
DAIRY PRODUCTS (Milk Cows)										
Creamery Butter	362,100	366,800	Lbs.	Lbs.	Lbs.	Lbs.	.31	.32	10,789,100	11,946,600
Farm Dairy Butter			35,316,143	36,986,486	35,316,143	36,986,486	.26	.27	3,587,200	3,484,000
Cheddar Cheese			14,040,000	12,762,000	14,040,000	12,762,000	.20	.22	614,100	859,900
Farm Dairy Cheese			3,140,978	3,908,545	3,140,978	3,908,545	.18	.20	39,500	45,000
Ice Cream (gallons)			225,000	225,000	225,000	225,000	1.12	1.20	954,800	1,115,600
Milk and Cream (consumed or fed to stock)			849,488	929,648	849,488	929,648	...	...	11,392,100	14,319,100
Total Dairy Produce									27,376,800	31,770,200

POULTRY (Laying Hens)	2,947,600	3,800,000	Average Production		Doz.	Doz.	.155	.234	4,364,500	8,002,800	
			105	108							
			Eggs (Commercial)	..		28,138,000	34,200,000	.40	.40	115,400	165,200
			Eggs (hatching)			288,500	413,000	.16	.20	4,800,000	6,400,000
			Poultry meat (lbs.)			30,000,000	32,000,000			9,279,900	14,568,000
Total Poultry Produce											
HONEY	..	Number of Hives	Pounds per Hive		Lbs.	Lbs.	.12	.145	374,400	362,500	
			24,000	91							
WOOL	..	Sheep Shorn	Pounds per Sheep		Lbs.	Lbs.	.19	.23	623,600	855,600	
			400,200	8.4							
SUMMARY											
ACREAGE UNDER CULTIVATION:			1941	1942	VALUE OF PRODUCTION						
Grain, Root and Fodder Crops			12,885,600	13,625,800	Grain, Root and Fodder Crops						
Summer Fallow			6,342,400	5,590,000	Animals Slaughtered and Sold						
New Breaking			201,600	209,000	Dairy Produce						
					Poultry Produce						
					Honey						
					Wool						
TOTAL			19,429,600	19,424,800	TOTAL						
					1941						
					1942						
					101,556,000						
					231,568,000						
					87,227,000						
					31,770,200						
					14,568,000						
					362,500						
					885,600						
					204,689,200						
					366,381,300						

*Value includes animals locally slaughtered and sold off farms.

REPORT OF THE FIELD CROPS COMMISSIONER

(A. M. WILSON)

New yield per acre records were established in 1942. The total bushelage of wheat was exceeded only in 1940, and the bushelage of coarse grains is much greater than in any previous year. An exceptionally mild, open winter prevailed and crop land was bare and dry in the early spring. Seeding was delayed because farmers were reluctant to plant in the dry soil. Heavy frosts, as much as 22°, occurred over the greater portion of central and northern Alberta on May 14th. Rains came in abundance in early June and continued through until freeze-up. Harvest and threshing were delayed by late maturing of crops, unfavourable weather and labour shortages. Early November snow stopped threshing operations in practically all parts of the Province. The Peace River area with less than average rainfall produced a normal crop, which ripened early and was threshed in good condition.

Huge reserves of wheat in elevators and on farms remain a major agricultural problem. The efforts of this Branch to reduce the acreage planted to wheat, however, has been confined to the promotion of substitute crops, the chief of which are barley, oats, forage crops, flax and special seed crops including soy beans and peas. Most of these crops, it will be noted, are of special wartime significance.

The main factor in wheat acreage reduction, however, has been the continuation of bonuses by the Dominion Government on land taken out of wheat and fallowed or seeded to other crops. Under the policy in 1941 payments to farmers totalled \$10,251,034.70 for a reduction in wheat amounting to 3,136,590 acres. To balance this reduction in wheat, the increase in coarse grains and flax amounted to 1,107,790 acres, in forage crops 162,144 acres, and in summerfallow 1,866,656 acres.

Payments under the Wheat Acreage Reduction Policy for 1942 are not yet completed, but it is indicated that the amount paid in bonuses will not exceed one-half of the amount paid in 1941.

The Canadian Wheat Board has regulated the deliveries of wheat and coarse grains to elevators by permits and delivery quotas. Farmers have been forced to device ingenious methods of providing farm storage because of lumber shortages.

Forage crops are now of special value with the wartime demand for beef and dairy products, and the needs for crops to utilize acreages formerly used in the production of wheat.

Seed production of certain minor crops is increasing in importance because former sources of supply have been eliminated.

The following shows the estimate of field crops in Alberta in the year 1942 with comparative figures for 1941:

Crop	1941 Acres	1942 Acres	1941 bus per acre	1942 bus per acre	1941 Bushelage	1942 Bushelage
Spring Wheat	6,481,000	6,370,000	15.0	28.7	97,000,000	183,000,000
Oats	2,799,000	3,284,000	22.8	53.3	63,800,000	175,000,000
Barley	1,543,000	1,925,000	18.1	37.9	28,000,000	73,000,000
Fall Rye	105,000	140,000	13.1	20.7	1,376,000	2,900,000
Spring Rye	55,000	75,000	8.8	20.0	484,000	1,500,000
All Rye	160,000	215,000	11.6	20.5	1,860,000	4,400,000
Peas	9,000	16,000	15.0	17.0	135,000	272,000
Beans	2,000	2,300	13.0	11.0	26,000	25,000
Mixed Grains	50,000	73,000	18.0	36.0	900,000	2,628,000
Flaxseed	131,000	183,000	7.3	12.0	956,000	2,200,000
Potatoes	30,000	28,500	65.0	95.0	1,950,000	2,708,000
Turnips, etc.	3,800	4,400	100.0	109.0	380,000	480,000
Hay and Clover	465,000	463,000	1.3	1.7	605,000	787,000
Alfalfa	180,000	220,000	2.0	2.5	360,000	550,000
Fodder Corn	8,000	14,000	3.5	4.5	28,000	63,000
Grain Hay	1,000,000	800,000	1.3	2.0	1,300,000	1,600,000
Sugar Beets	23,800	27,600	12.48	12.25	297,000	338,000

FORAGE CROP POLICY

The value of forage crops in the present wartime agricultural programme cannot be over-emphasized. Reserves of wheat, increased acreages of coarse grains, and an expanded live stock industry necessitates that a balance with forage crops be maintained.

Then, too, as a means of soil conservation, weed control and land utilization on labour depleted farms, forage crops play an important role. The extent to which the Provincial Policy met these objectives in 1942 depended upon availability of seed and the financial limit to which the policy could be expended.

During the year the distribution plan was extended to seven new municipalities and eight new local improvement districts.

A summary of seed distribution to date is as follows:

Kind of Seed	Ave. Price	Pounds Distributed		
		1942	1941	1937-41
Alfalfa	29c	98,238	115,689	303,662
Crested Wheat	13c	41,225	43,915	126,306
Brome	15c	68,253	90,871	276,452
Sweet Clover	9c	26,185	39,950	207,897
Red Clover	25c	7,450	13,763	34,410
Alsike Clover	21c	6,450	10,959	27,638
Timothy	11c	12,690	24,710	69,554
Red Fescue				50
Red Top	23c	340	490	945
Slender Wheat			100	200
Alsike-Timothy Mixture	12c	3,115	4,926	4,926
		<u>263,946</u>	<u>345,373</u>	<u>1,052,040</u>

Since the policy was instituted in 1937, more than 15,000 farmers have been encouraged in the production of better fodder and seed crops.

Approximately 50 municipal districts completed their policies in the past two years, yet many have continued to distribute seed at cost.

Alfalfa and brome are in greatest demand and are being seeded in all sections of the Province. Crested wheat is largely confined to the drier open prairie sections. Altaswede is practically all grown on the grey soil, while alsike and timothy are in demand for seeding on peaty soil or in black soil areas with higher precipitation.

Grass and legume mixtures are being recommended by the Department for forage purposes, but not for seed production. Farmers in districts suitable for seed production have been supplied with the best seed obtainable.

WEED CONTROL

In 1942 a wet season and shortage of labour made weed control particularly difficult. Growth was heavy, and the weed population increased more than in any previous year. Work on summer-fallows was rendered insufficient and ineffective because of rainfall. Fewer weeds than usual were destroyed in crops and on waste lands, and many matured their seeds.

Farmers were hard pressed all season. However, those who had attempted to control weeds in previous years were better able to meet the unusual circumstances of 1942 than farmers who have consistently refused to take the problem seriously.

The field staff of weed control for the year were seven weed supervisors, 27 improvement district inspectors, and about 290 municipal inspectors.

Beginning in 1923, supervisors have been appointed whose first duty it has been to urge upon municipal officials the need for action on weed control and to co-ordinate local effort. Unfortunately, after twenty years, we are still far from securing uniformity in either amount or standard of work attempted. The following summary table shows wide variation in expenditure for weed inspection:

Amount Expended	No. Districts	Amount Expended	No. Districts
Nil	12	\$401-\$ 600	12*
\$ 1-\$200	47	601- 800	9*
201- 400	47	801- 1000	6***

*Indicates number large municipal districts included.

On the other hand, work in improvement districts is reaching greater uniformity, and the amount spent makes possible the planning of constructive work. In the table below there is set out a comparison of the effort made in municipal and improvement districts.

	Improvement Districts	Municipal Districts
Weed Inspection Costs	\$ 17,235.79	\$ 37,082.00
Assessed Valuation	60,347,986.00	284,082,688.00
Weed Inspection Costs expressed as a Mill Rate	0.284	0.130

In 1942, the Department of Agriculture, assisted by the Provincial Marketing Board, arranged with the Wartime Prices and Trade Board for the purchase of 40,000 pounds of sodium chlorate, which was distributed to farmers through the offices of municipalities and weed inspectors.

In the Lethbridge and Calgary districts, field tests were begun to determine the value of carbon bisulphide in the eradication of persistent perennial weeds under Alberta conditions. It is hoped that this comparatively new herbicide may prove more effective than sodium chlorate when applied under certain conditions to such weeds as hoary cress.

This year a small appropriation was provided for the control of weeds on Crown lands. This was used to prevent the spread of seeds where same might menace adjacent lands, and in the purchase of forage seeds for seeding down infested areas.

Benefits will accrue to nearby farmers on the seeding down of waste and weed infested lands to forage crops. Therefore, the assistance of municipal districts and farmers has been sought in the conduct of the latter work.

Special attention has been paid the tartary buckwheat problem. Seed studies begun by Mr. Norman G. Lewis, Dominion Supervising

Seed Analyst, Calgary, were continued, and some important results obtained. Now the Department of Botany at the University is doing special work along the same lines. The problem of eradicating the weed has been discussed with representatives of the grain and seed trades, and the Dominion has been asked to declare tartary to be a weed seed under The Seeds Act.

One of the most serious problems in the control of noxious weeds in Alberta arises with respect to four perennial weeds, namely, field bindweed, hoary cress, leafy spurge, and Russian knapweed. As yet, only a few sizable infestations of these weeds appear in the Province, but there are many small patches. Unless practical and effective measures are taken quickly, their cost to farmers will increase out of all proportion to the total cost of eradication if undertaken now.

Fortunately, we may be guided in our attack on the problem by drawing upon the experiences of several of the States of America. Of the various eradication programmes in operation, the one adopted in Kansas would seem to best meet our needs. In that State, a field bindweed, hoary cress and Russian knapweed eradication programme was begun in 1938 with extremely good success.

To deal with the bindweed programme in Kansas, a survey showed the weed to be on 41,099 farms. In the period 1938-1940, 25,091 farm operators gave their undertaking to co-operate in the eradication programme, and although 10,149 farms were so badly infested that work was undertaken on the installment plan, the weed was eradicated from 4,522 farms at the end of the period.

Should it be the desire of farmers in Alberta to attack the problem of serious perennial weeds, the first step would seem to be to secure joint action on the part of municipal and Provincial authorities with respect to the administrative set-up. The providing of proper supervision and a basis for the keeping of eradication records on each farm is important. Then would come the enlistment of farmers wishing to co-operate, and commencement of the work of eradication.

It should be emphasized that if progress is to be made, a definite programme must be formulated and carried out with respect to each infestation. In other words, if results are to be expected the resolution undertaken by all at the outset must be maintained to the end, on each and every farm infested.

PEST CONTROL

Grasshoppers.

Alberta's grasshopper population decreased annually from the 1938 peak to the end of 1941, but increased in 1942. Although a considerable number of the eggs failed to hatch, while many more hatched late, there were still sufficient hoppers to do a lot of damage. The 1942 outbreak was very spotty, and in some localities grasshoppers were so abundant in midsummer and early fall that only by considerable effort were farmers able to save their crops.

Damage to crops in general was light, due in part to the delayed hatch and in part to the excellent growing conditions prevailing over most of the affected area. The demand for poisoned bait was 50% higher than last year, and good results were obtained by poisoning. Flax crops were heavily attacked, and where farmers failed to utilize supplies of bait offered, they frequently suffered heavy losses. Unprotected cover crops in south-western Alberta

were destroyed in many cases, and some soil drifting occurred as a result. The application of bait to flax and cover crops was quite effective against the adult grasshopper. It is estimated that approximately 50% more acres of crop were saved by the use of bait this year than last. Small local outbreaks of grasshoppers occurred far beyond the borders of the regularly affected areas. At Barrhead and in the Keg River settlement near Caracajou, poisoned bait had to be used to save crops. The following are some comparative data respecting the 1941 and 1942 grasshopper campaigns:

	1941	1942
Acres of land in the area	21,000,000	26,250,000
Acres of crop land menaced	127,000	327,800
Number of stations operated	28	45
Bushels of poisoned bait spread	33,000	49,000
Number of farmers receiving bait	375	817
Estimated acres of crop destroyed	9,000	12,000
Estimated acres of crop saved	26,000	39,000

Wheat Stem Sawfly.

The extremely heavy precipitation experienced over most of Alberta's sawfly area this year appeared to have little effect on the sawfly population. Sawflies were present over about the same area as in 1941 and apparently in about the same numbers. The larvae appeared to survive the wet season very well, and the heavy rains during the period of oviposition did not noticeably reduce the number of eggs laid; consequently in most districts there were probably about as many stems occupied as in the previous year.

In spite of the heavy infestation, the damage to crops this year was comparatively light. Prolific stooling of wheat and good growing conditions produced heavy stands, so that many stems which were cut were not prostrated, but remained standing, and were recovered in harvesting operations. In the Nobleford-Turin-Milo-High River rectangle, fields were seen with 70% to 85% of the stems in the margins and 40% to 60% throughout the fields, occupied by sawfly larvae. Such of these crops as were harvested promptly showed little loss, but those which waited long for combining and cutting due to wet weather and labour shortage, lost up to 30% of the prospective yield. The harvest season was not conducive to recovery of lodged stems.

There has been no apparent recession in the area of occurrence of the sawfly, and there may be a trend toward greater losses. As the farm labour situation becomes more difficult, delays in harvesting operations are likely to favour greater cutting and falling of stems. The spring of 1943 will probably see a greater proportion of our wheat acreage seeded in stubble, due to shortage of farm help, and wheat seeded in uncultivated wheat stubble is particularly liable to heavy loss. Sawfly traps may also be neglected because of lack of time needed to prepare them.

Say's Grain Bug.

Crop damage due to this pest was negligible this year. Cool, wet weather in spring and early summer reduced the first generation of adults and delayed development of the second. In general, 1942 was not conducive to an increase in numbers of Say's Bug, and only occasional reports of bugs feeding on crops were received. Damage was slight.

Cutworms.

The red-backed cutworm caused some damage to barley and wheat crops seeded on summerfallow in central Alberta. In the Red

Deer, Alix and Camrose area, coarse grains were damaged from 5% to 25%, and reseeding was necessary in some cases.

The pale western cutworm, which is frequently destructive in southern Alberta, was not a serious problem this year.

Wireworms.

Abundant precipitation over southern Alberta early in the season assisted greatly in reducing damage by this pest. Some grain was attacked, but recovery was very satisfactory. In sections of central and northern Alberta, losses of wheat and early seeded coarse grains was heavy. On lighter soils north and east of Edmonton, through Tofield, Gibbons, Willingdon and Mannville particularly, a considerable number of fields of grain were completely destroyed, and had to be reseeded. Many others were badly thinned and resulted in weedy crops after the June rains commenced.

Beet Webworm.

Local heavy infestations of the beet webworm occurred throughout the Province. Gardens in many isolated sections were destroyed, while alfalfa stands were stripped and seed setting was affected. At Brooks, alfalfa and flax crops on several widely separated farms were attacked. In most instances where flax was infested, there was a sufficient quantity of pig weeds and other non-economic host plants present to sustain the pests through the larval stage, so the damage to crops was only partial. Several thousand acres of sugar beets in the Picture Butte, Barnwell and Raymond districts were affected. Partial damage occurred over at least a thousand acres, but due to favourable climatic conditions, recovery was very satisfactory and yields were not seriously affected.

Colorado Potato Beetle.

The potato beetle was present over much the same area as last year. Damage to potatoes was not particularly heavy, although complete defoliation did occur in some fields. To farmers and gardeners in north central Alberta, 1942 is the third year of experience with this pest. Consequently, control was more adequate and effective, with losses correspondingly lighter.

Forest Tent Caterpillar.

Shade and ornamental trees were attacked by the tent caterpillar throughout most sections of the Province north of the Wetaskiwin-Provost line of the C.P.R. The attack was less general than in 1941, but in sections, especially east and west of Edmonton and in the Peace River, defoliation of poplar trees and some ornamentals was quite severe.

Psyllids.

Only one greenhouse was found to be infected with the potato and tomato psyllid. This was in Medicine Hat, and was effectively treated. Several inspections were made of all greenhouses in Medicine Hat and of most of those in Calgary, and with this exception, all houses were found in order at all times. Evidence of damage to potato and tomato crops in the vicinity of greenhouses, such as was seen two and three years ago, was lacking in 1942.

Rodents.

As in the case of insect pests, luxuriant growth of crops in 1942 repaired most of the damage done by most rodents. The prairie gopher was present in usual numbers, but little permanent damage to crops was reported. Bush rabbits and jack rabbits are causing some damage to feed stacks and to grain still in the stook in the area north and west of Edmonton. Here control measures are being found necessary.

Columbian Ground Squirrel.

This has become a serious pest of all forage, garden and cereal crops in sections of the foothills region of southern Alberta. Local control efforts have proven ineffectual to a large degree, and in 1942, as in several years previously, heavy losses have occurred. This is particularly the case in the farm-ranch area north and west of Pincher Creek and Lundbreck, where the population is extremely high.

Tests were made of locally popular poisoned baits to determine their effectiveness against the Columbian ground squirrel. Strychnine Alkaloid was made available to residence at reduced cost as an expedient until a more satisfactory and practical bait was discovered to replace the moderately effective baits being employed. The Alkaloid was generally found more suitable than the sulphate previously used.

It is now known that Columbian ground squirrel is present in outbreak proportions over a strip of country some 15 to 30 miles wide, running adjacent to the Rocky Mountains, from the International Boundary northward to Morley on the Banff-Calgary C.P.R. line. In parts of this area it has become almost impossible to produce gardens or cereal crops satisfactorily, while heavy inroads are made on grasses seeded for hay and pasture.

A considerable number of tests were conducted on two ranches to discover a suitable bait. Some 25 formulae were employed and compared. Out of these, some three or four showed promising results, while one or two proved very satisfactory against this pest. A formula was discovered which produced nearly 50% higher mortality than the best baits employed locally. The use of this bait may make it possible to materially reduce losses due to this pest in future years.

Diseases.

Crown rot of alfalfa in the late winter and early spring caused considerable thinning of some alfalfa fields in the north central part of the Province. Bacterial diseases caused losses to seed and canning crops in the irrigated areas of the south.

Bacterial Ring Rot.

The most dangerous and destructive disease of vegetable crops in Alberta continued to be bacterial ring rot of potatoes. Bacterial ring rot is, without exception, the most destructive disease of potatoes that has ever appeared in this Province. Having been first discovered in the Lethbridge district in 1937, ring rot has increased in intensity in that district and has entered new districts. It is so persistent and contagious that to date efforts to bring it under control have been unsuccessful.

The following compilation shows the increase of ring rot from 1937 to 1942, as determined by annual surveys:

	1937	1938	1939	1940	1941	1942
No. of Farms Inspected			680	261	430	406
No. of Townships in which disease was found	2	9	11	12	16	22
No. of Farms found infected	2	23	40	73	102	151
Acres of diseased crop found			180	674	693	982.5

The survey of potato crops conducted in 1942 was quite extensive and thorough, covering most of the irrigated sections of the Province. Great difficulties were encountered in this survey due to frost and inclement weather, and it must be assumed that there are infected fields that were not discovered, due to these conditions.

Ring rot is now known to exist in the large irrigated area surrounding Lethbridge, Raymond, Picture Butte and Taber, as well as in the Brooks, Rosemary and Drumheller districts. Growers who were found to have ring rot infected crops were visited in the spring and fall, when control measures were discussed thoroughly with them. Assistance in obtaining pure seed stocks was given. Meetings, personal letters and the press were employed to encourage better control and to educate growers respecting measures to be employed. It is evident from the 1942 survey that adequate measures of control are not being obtained by present measures. Plans are being made to place restrictions on certain phases of production in affected areas in an effort to bring the disease under control.

JUNIOR GRAIN CLUBS

In the crop improvement programme of the Province, Junior Clubs continue to be an effective agency. Excellent work has again been accomplished by means of introducing and multiplying pure seed grain of suitable varieties. Club members have demonstrated on hundreds of farms the superior value of registered seed over the common seed ordinarily used. These young farmers have learned the technique of successfully handling a seed plot, and have demonstrated a practical method of providing superior seed for the whole community at a low cost. Where older farmers, handicapped by lack of technical knowledge, were reluctant in using registered seed, junior farmers with their natural enthusiasm and curiosity have made remarkable progress.

The heavy carry over of wheat in Western Canada and the general effort toward wheat acreage reduction had the inevitable effect of reducing the number of wheat clubs during 1941 and 1942. Introducing a new grain club project in line with the war production programme, 22 new feed barley clubs were organized. Malting barley clubs were also stimulated through a new type of contract club which provided for the growing and marketing of carload lots of pure seed. These new projects, together with the admittance of farm young women to replace their brothers who had enlisted in war services, restored club work to almost the high level of 1940. The number of clubs and memberships compare with those of 1940 and 1941 as follows:

	1940		1941		1942	
	No. Clubs	No. Members	No. Clubs	No. Members	No. Clubs	No. Members
Wheat	78	1,417	54	896	40	675
Oats	18	256	21	396	22	391
Feed Barley					33	412
Malting Barley	6	121	8	92	12	185
Potatoes	1	13	2	19		
Flax	2	33	1	10		
	<u>107</u>	<u>1,841</u>	<u>84</u>	<u>1,327</u>	<u>96</u>	<u>1,663</u>

The 96 clubs operating in 1942 held some 288 official meetings with a representative of the Department participating on the programme. District agriculturists supervise the organization of the clubs and provide guidance within their districts. Membership is open to young farmers between the ages of 15 and 22. Members in the first instance receive sufficient seed for a three-acre plot and pay a membership fee of \$3.00. Almost 8,000 bushels of registered and certified seed were provided this year as compared with 3,000 bushels the previous year. Members are encouraged under Departmental supervision to multiply the seed and maintain its purity. The seed produced is used first on the members' farms, while the surplus soon finds its way to almost all the farms of the district. It is amazing how rapidly seed grain is increased. Crop reports from individual club members reveal that fully 150,000 bushels of superior seed were produced last year from their three-acre specially cared for plots alone, while millions of bushels were produced from larger fields descending directly from the original registered seed acquired by the members. It is estimated that each year well over half a million bushels of pure-to-variety seed is used as a result of the operation of Junior Grain Clubs. The general desire of farmers in many districts to change from unsuitable or mixed varieties to some pure or better variety has been met in a most satisfactory manner through these clubs.

Instruction is given in seeding, cultural practices, isolation, identification of weeds and their control, identification of grain varieties, how to determine the best stage of maturity for harvesting, curing of grain to maintain its natural brightness of color and brilliance of lustre, care in threshing, and finally in cleaning and grading the grain for seed and for exhibition. Field days are held in midsummer when crops are in head for demonstration in roguing. Many adults attend these meetings along with the youth.

Standing crop competitions are held for each club. All plots are scored and prizes awarded. Local seed fairs are held for each club in the fall, when further prizes are awarded. Each fall a free trip is given a team of two members from the club which wins the Provincial Grain Judging Competition. This trip is financed by the Canadian Council on Boys' and Girls' Club Work, Ottawa. This year the winning team representing the Bon Accord Club was composed of Frank Chubb and Brock Patton. In the National Grain Judging Competition at Toronto, the Alberta team won third place. There are eight competitions in the grain club programme. The educational value of these competitions cannot be readily overestimated. The chief values accrue not to the winners alone, but to the whole membership in striving in their local clubs to qualify in the various competitions. It is evident that club members get value out of their club work in direct proportion to the effort they put into it.

Several new features introduced into club work yielded pleasing results. Through the feed barley project inaugurated this year, nearly 2,000 bushels of Newal barley seed was introduced into 22 districts, and have provided superior seed for a large acreage for the following year. Some 40,000 bushels of Newal barley was produced by club members this year. These clubs are meeting in a satisfactory manner the demand of many farmers, who had been reluctant in growing barbed varieties, for a smooth awn barley for live stock feed. Contract malting barley clubs undertook for the

first time this year to produce from registered O.A.C. 21 seed carload lots of seed for sale under contract. This type of club created new economic interest, provided training in co-operative marketing and yielded satisfactory financial returns. Another innovation undertaken this year was transferring of the Annual Efficiency Prize Trip, which had been held in connection with the Provincial Seed Fair at Edmonton during midwinter at Edmonton, to the School of Agriculture at Olds in July. An agricultural short course was provided, interspersed with sports, moving pictures and other entertainment. Including the winners from the live stock clubs, there were 140 farm young people attending this farm club week at Olds, and the experiment of holding it during the summer proved an unqualified success.

Folder files were again provided all club members by the Department. These files bore a full list of Departmental and University Farm bulletins, where information regarding many farm problems could be found. Members were urged to use these folder files as a repository for saving for future reference, not only club publications, but also any agricultural clippings of value to them. Later examination of the files revealed that a surprising amount of useful and varied information had been collected. Crop reports were also completed by a large proportion of the members, showing length of time required from seeding to maturity, extent and nature of weeds, pests, disease or weather damage, and what measures were used to combat them; total yield, yield per acre and disposition of the crop. In computing the average yields reported for 1,400 plots for the last two years, it was found that club wheat plots yielded an average of eight bushels more, oats 23 bushels, and barley 12 bushels per acre more than the average yield of these crops for the whole Province. Club plot work points the way toward better farm practice in crop production.

Grain clubs were sponsored again this year by the following organizations: Wheat clubs, Alberta Wheat Pool; Oat clubs, United Grain Growers, Limited; Malting Barley clubs, Canada Malting Company, Limited. The North-West Line Elevators Association, Agricultural Department, sponsored the feed barley clubs of the Province. The support given by these organizations in the matter of paying for part of the cost of the seed, providing prizes, trophies and free trips, has been of great value in stimulating general effort and maintaining interest in the work.

The Department of Agriculture trophy for the wheat club securing the highest average score in the inter-club standing crop competition was won for the third time in succession by the Drumheller Club, with the Morrin Club a close second. The Alberta Seed Growers' Association trophy for the oat club securing the highest average score in the standing crop competition was won by the Abee Club, with Waskatenau Club as runner-up. The highest average score in the inter-club standing grain competition among the feed barley and malting barley clubs was attained by the Vauxhall and Spedden Clubs respectively.

The many club members who have come to regard the International Hay and Grain Show at Chicago as the culmination of their year's club work, will regret the cancellation of this show for the duration. During recent years, 10 world championships and three reserve championships have been won by club members, besides the major portion of other high winnings of the Province in the

cereal grain classes. Though the winning of world championships has been the most spectacular achievement of club work, it is nevertheless not the most important. The major values accrue to the rank and file of the members who have been stimulated in their effort in mastering the technique of better farming while yet on the threshold of their career, and in setting their limitless energies to work for a more satisfying life on the farm.

SEED SHOWS

Seed shows were designed to aid in crop improvement work by creating greater interest in good seed and by assisting in its sale and distribution. They also bring to the attention of farmers, new varieties that have outstanding merit. The display of high quality seed and grain sets a standard for farmers to attain, and thus leads to improved farming practices. Nor should the educational values to exhibitors themselves be lost sight of. They must first learn what to strive for, then how to produce the quality required, and finally, how to clean and grade the product to the highest degree of plumpness, uniformity and finish.

The Alberta Provincial Seed Fair was held in Edmonton as in the previous year. In line with recent tendencies for making seed fairs serve as an agency to promote the sale of superior seed, the policy of requiring cereal exhibits to represent a bulk lot on the farm was applied to both the registered and commercial seed divisions.

A feature of the show was the Junior Inter-club Section, in which the three winning samples from each local junior grain club seed fair represented the club as a group exhibit. This display of over 250 samples in this section proved of unusual interest to the public.

While the classes in the Junior Division were well filled and the competition keen, the number of exhibits coming forward in the registered and commercial divisions was disappointing. Lack of interest among adult seed growers in showing their product was probably due to the confidence developed in the mind of the seed buying public in the quality of established seed grades. Farmers as a rule no longer buy their seed on sample, but have learned to depend upon established seed grades to secure satisfactory supplies.

Perhaps the most attractive display of the show was that of the winning Alberta grain and seed exhibits from the 1941 International Hay and Grain Show, Chicago. The display included world championships in wheat, oats and barley as well as reserve championships in two-rowed barley and field peas, along with some 40 other important winnings.

Since the International Hay and Grain Show was withdrawn for 1942 and probably for the duration, it seems fitting at this time, as a matter of record, to report the winnings of first awards and world championships by Alberta grain exhibitors. It is a long record, of which all Canadians may well be proud. No doubt these winnings have been instrumental in attracting the favourable attention of the world to the superb agricultural possibilities of this Dominion. Such persistent winning is important at this time when we are endeavouring to expand our export seed market. The attention of seed importers and buyers will be focussed on Alberta, where seed of such high quality and good appearance has won high recognition.

WINNERS OF FIRST PRIZES AND CHAMPIONSHIPS AT VARIOUS WORLD'S GRAIN SHOWS

Centennial Exposition, Philadelphia

1876—Championship in Wheat French Mission Fort Chipewyan
Championship in Barley French Mission Fort Chipewyan

World's Fair, Chicago

1893—Championship in Wheat Rev. J. G. Brick Shaftsbury
Settlement on the Peace River south of
Berwyn

International Dry Farming Congress, Lethbridge

1912—Championship in Wheat Henry Holmes Raymond

International Grain and Hay Show, Chicago

1919—Championship in Oats J. W. Lucas Cayley
1920—Championship in Oats J. W. Lucas Cayley
1st and Championship in Peas E. H. Buckingham Claresholm
1921—1st and Championship in Oats J. W. Lucas Cayley
1st in Alfalfa G. McNaughton Brooks
1922—1st and Championship in Oats J. W. Biglands Lacombe
1st and Championship in Barley Nick Taitinger Claresholm
1st and Championship in Rye J. W. Lucas Cayley
1st in Peas J. T. Hill Lloydminster
1923—1st and Championship in Wheat H. G. L. Strange Fenn
1st in Peas H. G. L. Strange Fenn
1st and Championship in Oats J. W. Biglands Lacombe
1st in Red Clover Nunemaher Bros. Brooks
1924—1st in Peas J. T. Hill Lloydminster
1st in Alfalfa Nick Clyelte Brooks
1925—1st and Championship in Peas J. T. Hill Lloydminster
1926—1st and Championship in Wheat Herman Trelle Wembley
1st and Championship in Oats Herman Trelle Wembley
1st and Championship in Peas J. T. Hill Lloydminster
1927—1st and Res. Champ. in Wheat Herman Trelle Wembley
1st and Championship in Oats Herman Trelle Wembley
1st and Championship in Peas Herman Trelle Wembley
1928—1st and Res. Champ. in Wheat Herman Trelle Wembley
1st and Championship in Peas Herman Trelle Wembley
1st in Timothy A. Lougheed Bowden
1929—1st and Championship in Wheat Jos. H. B. Smith Wolf Creek
1st in Peas P. U. Clubine Wembley
1st in Oats E. J. Shank Athabasca
1930—1st and Championship in Wheat Herman Trelle Wembley
1st and Championship in Peas Herman Trelle Wembley
1st in Timothy Robert Cochrane Grande Prairie
1931—1st and Championship, Durum Wheat Herman Trelle Wembley
1st in Oats Herman Trelle Wembley
1st and Res. Champ. in Early Oats Herman Trelle Wembley
1st and Championship in Peas Herman Trelle Wembley
1st in Rye Herman Trelle Wembley
1st in Barley Herman Trelle Wembley
1st in Flax Herman Trelle Wembley
1st in Timothy Herman Trelle Wembley
1st and Res. Champ. in Peas P. U. Clubine Wembley
1st and Championship in Alfalfa O. P. Anderberg River Bow
1932—1st and Championship in Wheat Herman Trelle Wembley
1st and Championship in Oats Fred Hamm Goodfare
1st and Res. Champ. in Field Peas Erick Anderson Wembley
1st in Timothy Erick Anderson Wembley
1st and Championship in Alfalfa Fred W. Ohman Scandia
1933—1st and Championship in Oats Ian Smith Wolf Creek
1st and Champ. in Barley (6 rowed) Nels Linden Wetaskiwin
1st and Championship in Field Beans Geo. Bathgate Diamond City
1st and Championship in Alfalfa C. Sorenson Scandia
1st in Barley (2 rowed) Jos. H. B. Smith Wolf Creek
1st in Winter Wheat S. B. Allsop Grande Prairie
1st in Flax R. A. Meeks Manville
1st in Timothy A. Mongeon Pincher Creek

World's Grain Exhibition and Conference, Regina, Sask.

1933—1st, Hard Red Spring Wheat(1 bus.) Freelen Wilford Stavely
1st, Hard Red Spring Wheat(10 bus.) Herman Trelle Wembley
1st in Late Oats Fred Paschetag Goodfare
1st in Late Oats (Yellow) Herman Trelle Wembley
1st in Alfalfa seed C. Sorenson Scandia
1st in Timothy seed Robert Cochrane Grande Prairie
1st in Brome seed Edward Harrop Hualien
1st in Slender Wheat Grass seed Schools of Agriculture Olds

International Grain and Hay Show, Chicago

1934—1st and Championship in Wheat Jack Allsop Wembley
1st and Res. Champ. in Oats Herman Trelle Wembley
1st and Championship in Field Beans H. Graham Iron Springs
1st and Res. Champ. Beans (A.O.V.) A. Giffin Brooks
1st and Championship in Timothy A. Mongeon Pincher Creek
1935—1st and Grand Champ. in Wheat Freelan Wilford Stavely
1st and Championship in Field Peas J. W. Shearer Morrin
1st and Championship in Field Beans H. Graham Iron Springs
1st in Field Beans (Great Northern) J. Hamilton Coaldale
1st in Timothy A. Mongeon Pincher Creek
1st in Sweet Clover W. J. Bryant Boyle

1936—1st and Championship in Wheat	Herman Trelle	Wembley
1st and Championship in Oats	Herman Trelle	Wembley
1st in Sweet Clover	W. J. Bryant	Boyle
1937—1st and Res. Champ. in Late Oats	Geo. Topolnisky	Andrew
1st in Field Beans	John Hamilton	Coaldale
1st and Championship in Field Peas	John Hamilton	Coaldale
1st in Crested Wheat	Soren Peterson	Tilley
1st in Soy Beans	John Hamilton	Coaldale
1938—1st and Championship in Wheat	F. Lloyd Rigby	Wembley
1st and Championship in Oats	Wm. Justyn Rigby	Wembley
1st, Wheat (Milling and Baking Test)	H. P. Wright	Airdrie
1939—1st and Championship in Wheat	F. Lloyd Rigby	Wembley
1st and Championship in Oats	Wm. Skladan	Andrew
1st and Champ., Field Beans(A.O.V.)	J. Hamilton	Coaldale
1st in Field Beans (Great Northern)	J. Hamilton	Coaldale
1st in Barley (6 rowed)	Eli Lastiwka	Willingdon
1940—1st and Championship in Wheat	F. Lloyd Rigby	Wembley
1st and Championship in Oats	Paul F. Pawlowski	Vilna
1st and Res. Champ. in Barley	Eli Lastiwka	Willingdon
1st and Res. Champ. in Field Beans	John Hamilton	Coaldale
1st and Champ. Field Beans(A.O.V.)	John Hamilton	Coaldale
1st and Res. Champ., Field Peas		
(A.O.V.)	James Herlihy	Edmonton
1941—1st and Championship in Wheat	Wm. Miller	Edmonton
1st and Championship in Oats	Wm. Skladan	Andrew
1st and Champ., Barley (6 rowed)	Paul F. Pawlowski	Vilna
1st and Res. Champ. Barley(2 rowed)	Tom Mynzak	Willingdon
1st and Res. Champ., Field Peas		
(A.O.V.)	James A. Herlihy	Edmonton
1st in Barley, Trebi	Jack Brindley	Lethbridge
1st in Field Beans (Great Northern)	Jack Brindley	Lethbridge
1st in Soy Beans	Thos. E. Brown	Cassils
1st in Alsike Clover	George Morden	Telfordville

ALBERTA SEED GROWERS' ASSOCIATION, LTD.

The Alberta Seed Growers' Association, Ltd., is now operating as an independent company from its offices in the Alexandra Block, Edmonton.

The following officers were appointed for 1942: H. P. Wright, Airdrie, President and Managing Director; L. Hendrigan, Winfield, Vice-President; A. T. Sinclair, Manager; Col. J. Hughes, Flatbush, Secretary; Directors: C. C. Patching, Lethbridge; M. McElroy, Calgary; L. C. Anderson, Bittern Lake; H. E. Bronson, Cherhill; D. Thomas, Sangudo; A. M. Smith, Wembley; P. U. Clubine, Wembley.

During the year the Alberta Seed Growers' Association distributed some 347,000 pounds of forage crop seed within the Province and exported an additional 337,000 pounds. Thirty-seven cars of oats were also shipped to Eastern Canada and United States markets.

PRODUCTION AND SALE OF REGISTERED AND CERTIFIED SEED

The production of registered and certified seed holds an important place in our farm economy. As our markets for commercial grain are chiefly export, it is imperative that we produce a high quality product which can compete on the export market. To produce an exportable product it is essential that we use good seed. In this we are favoured by a soil and climate conducive to the production of high quality seed. The proof of this lies in the increasing demand for Alberta grown seed in Eastern Canada and the United States.

The following are the amounts of seed grain marketed through the Alberta Crop Improvement Association and the Alberta Seed Growers' Association, Ltd., with 1940 and 1941 figures given for comparison:

	1940	1941	1942
Wheat	68,900	16,000	5,961
Oats	60,825	99,000	34,659
Barley	4,100	4,500	4,349
Flax			868

In addition to the above, approximately 64,000 bushels of oats were shipped to Eastern Canadian and United States markets.

FOUNDATION STOCK SEED POTATOES

There has been an increased demand for Alberta grown potatoes from the export trade during the year with 104 carloads being inspected. The demand is for good quality stock, and in order to protect the expanding export market, the growers have requested stricter regulations covering the grading of potatoes. Under the new regulations it is unlawful to buy, sell, or have for sale any potatoes which are below the minimum grade standard. It is also unlawful to ship or transport ungraded potatoes without first obtaining a permit. The enforcement of these regulations will undoubtedly improve the quality of potatoes offered for sale, and will eliminate the dumping of large quantities of inferior potatoes on the local markets. It should also aid in checking the spread of potato diseases often present in the ungraded stocks.

Potato diseases continue to present a difficult problem, and in order to curb the spread of disease the Dominion Government has enforced stricter regulations covering the production of certified seed.

The new regulations require growers of certified seed to plant at least one-tenth of their acreage in unit rows unless foundation seed or seed approved by the inspector is used. With the present shortage of labour, this is likely to result in a greater demand for foundation seed.

In order to meet this demand, the Field Crops Branch is assisting in the production of Indexed Foundation Seed Potato Stocks from which high quality foundation seed can be produced.

Tubers for indexing are chosen from vigorous, disease free, high producing stock, and are tested for disease in the greenhouse during the winter. Tubers which pass the test are returned to the grower to be planted in tuber units. The growing crop is rigidly inspected, and only units exhibiting freedom from disease, high yielding ability, and trueness to type are retained. This stock in the following year is grown in unit rows under rigid inspection, and the potatoes qualifying in the second year are available to approved growers as foundation seed. The use of such carefully developed seed stock should have a marked effect in improving the quality of the potatoes grown in Alberta.

The Alberta Certified Seed Potato Growers' Association.

Any grower of certified seed potatoes may become a member of this Association. This Association is making a real contribution to the potato industry, as is shown by the fact that 16,660 bushels of certified seed were produced in Alberta this year.

The Southern Alberta Potato Growers' Association.

This Association serves the interests of the potato growers in southern Alberta, both in encouraging the use of better seed and in obtaining markets for commercial stocks.

PRODUCTION AND SALE OF FORAGE CROP SEED

The forage crop acreage has increased greatly in Alberta in the past year or two. This is due to several causes. Under the Wheat Acreage Reduction Policy farmers received a bonus on land seeded

down to forage crops. The Provincial Government also encouraged the seeding of forage crops through the forage crop policy instituted some five years ago. Farmers on the grey wooded soils are seeding down more land to legumes, partly because of the need for high quality roughage, and partly because of the residual effect in increasing the fertility of the soil and because of the high prices being received for the seed produced. The growing of legume seed on the grey soils is assuming greater importance each year, and is now one of the principal cash crops of the area.

The domestic market for forage seeds has been strong and, in addition, there has been a brisk demand from Eastern Canada and the United States. The production of legume seeds in Alberta showed a marked increase over 1941, due largely to increased acreage being saved for seed production and because of substantially increased yields in the northern areas of the Province.

The following figures give the estimated production of the most important crops with the 1940 and 1941 figures for comparison:

Kinds	1940 lbs.	1941 lbs.	1942 lbs.
Alfalfa	600,000	570,000	2,000,000
Sweet Clover	300,000	320,000	2,000,000
Red Clover	150,000	200,000	240,000
Alsike	200,000	180,000	430,000
Timothy	1,000,000	1,250,000	1,350,000
Crested Wheat Grass	300,000	400,000	250,000
Brome Grass	2,000,000	3,025,000	3,500,000

The following are comparative figures on the acreages inspected of registered and certified forage crop seeds:

Kinds	Acreage Inspected 1940	Acreage Inspected 1941	Acreage Inspected 1942
Brome Grass	8,532	6,370	12,634
Crested Wheat Grass	692	443	612
Creeping Red Fescue	254	214	607
Sweet Clover	62	117	
Alsike	65	26	159
Alfalfa	1,400	760	2,019

PORTABLE SEED CLEANERS

This policy was originally a joint Dominion-Provincial Policy in establishing portable cleaners. With the commencement of the war, the Dominion Government withdrew its assistance. The Province is continuing this policy, with the organizations being called upon to pay 50% of the cost of the equipment, rather than one-third as was the case under the joint Dominion-Provincial policy. At present cleaners are located at the following points: Innisfail, Gage, Berwyn, Fairview, Lacombe, Camrose, Grande Prairie, Warburg, South Edmonton, Barrhead, Sangudo, Cherhill and Springbank.

For the season 1941-42, quantities of grain, grass and clover seed cleaned by the above cleaners consisted of approximately:

Kind	Quantity Bushels	Kind	Quantity Pounds
Wheat	138,687	Brome	112,636
Oats	96,476	Crested Wheat Grass	55,584
Barley	37,555	Alfalfa	80,558
Rye	1,200	Sweet Clover	2,757
Flax	3,408	Timothy	44,345
		Red Clover	40,000
		Alsike Clover	22,000

REPORT OF THE ACTING LIVE STOCK COMMISSIONER AND SUPERVISOR OF FEEDERS' ASSOCIATIONS

(A. A. CAMPBELL)

The live stock industry of Alberta continued to make further advances in 1942, the greatest increase being in swine production. During the year, Alberta passed Ontario as the largest swine producing province in the Dominion.

Continued higher price levels for commercial live stock greatly stimulated the demand for breeding stock, and prices were high at all pure-bred sales. The demand for good boars was greater than the supply.

Because of certain restrictions in motor travelling, and with further enlistments in the armed forces, the increased tempo of the live stock business has taxed the remaining personnel of the Branch.

Outstanding features of the feed problems of 1942 were the ability of farmers to feed large quantities of wheat to make up for the shortage of coarse grains prior to threshing, the bountiful crop of coarse grains grown in the current year, and also the extreme difficulties experienced in harvesting.

Price ceiling schedules and export restrictions were applied to the marketing of cattle, and no doubt had some influence on the regular delivery of live stock to markets and to the feed lots.

Approximately 12,000 head of cattle were placed on cover crop in the area extending from Claresholm to High River. This method of producing rapid gains on beef animals at a reasonable cost is becoming quite attractive to an increasing number of cattle feeders each year.

An event of considerable importance to the beef cattle industry was the finishing of several thousand head of cattle in Alberta feed lots by large American interests. It is doubtful if this procedure will be continued under existing beef export restrictions.

It would appear at the end of 1942 that the greatest single factor working against the prospects of increased production for 1943 is a shortage of farm labour.

Interest in live stock improvement policies continued to grow. A brief resumé of the live stock improvement policies and other activities of the Live Stock Branch will be dealt with under their respective headings.

CATTLE

Dominion Department of Agriculture figures show cattle marketings in Alberta for the past eight years as follows:

1935	257,782	1939	248,748
1936	363,811	1940	257,823
1937	311,506	1941	292,083
1938	264,505	1942	281,278

The increased volume of beef consumed by the armed forces and civilian population has kept beef prices at the ceiling and, in some cases, prices paid for live animals have exceeded the corresponding ceiling prices for ungraded dressed beef. It became evident in May that there would be a shortage of good beef for domestic use and restrictions were put on exports. Unfortunately, a greater

part of the good heavy beef had already been exported, and was therefore unavailable for domestic consumption.

The following table shows the trend of cattle exports from Alberta to the United States for the past six years:

1937	72,205	1940	48,889
1938	38,185	1941	76,534
1939	61,884	1942	51,303

Cattle feeders had a very good year with strong demand for finished cattle and with margins running from two to three cents per pound.

The scarcity of good beef has resulted in a considerable number of cattle that would otherwise have gone to the feed lots, being purchased at slaughter cattle prices. This, no doubt, is one reason why fewer cattle went into the feed lots in the fall of 1942.

The destination and numbers of cattle shipped out of the Province during 1942 were as follows:

British Columbia	69,910	Quebec	19,421
Saskatchewan	5,493	U.S.A.	51,303
Manitoba	21,537		
Ontario	11,797	Total	179,461

The breeders of pure-bred cattle had a ready market for all good quality cattle offered. There was evidence of expansion in practically all breeds. The Live Stock Branch has tried to keep in contact with many breeders, in order to be able to direct prospective purchasers to the breeders who are most conveniently located to fill orders.

The demand for pure-bred cattle by U.S. buyers has been quite satisfactory, and the movement of both females and bulls has been equal to the available supply.

BULL EXCHANGE AND ASSISTANCE POLICY

This policy was in operation for the fourth consecutive year, and 315 bulls were placed with farmers. As in former years each applicant under the policy was required to dispose of a grade or inferior type bull for slaughter before he could obtain a pure-bred. In keeping with the increased demand for bulls, prices advanced from 15% to 20% over prevailing prices of the previous season. Bulls for the 1941-42 policy were purchased from 80 Alberta breeders.

PURE-BRED AUCTION SALES

Prices were high at all private and public auctions. Several auction sales of pure-bred females were held, as well as the Bull Sales at Calgary, Edmonton, Lacombe and Lloydminster. Prices for pure-bred bulls were generally higher than those of previous years.

CALGARY BULL SALE

Breed	1940		1941		1942	
	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
Shorthorn	155	\$158.52	253	\$172.82	176	\$192.47
Angus	65	173.44	107	195.70	146	184.35
Hereford	404	205.22	310	303.77	401	299.23

EDMONTON BULL SALE

Shorthorn	61	\$119.59	54	\$161.50	50	\$186.20
Angus	6	128.33	6	144.17	3	191.67
Hereford	14	127.50	6	258.33	4	167.50

LACOMBE BULL SALE

Shorthorn			50	\$109.90	23	\$188.91
Angus			23	136.30	18	195.83
Hereford			40	193.75	35	184.71

THE DAIRY HEIFER CALF POLICY

Owing to the increased demand for dairy products and for general improvement in the quality of dairy cattle, the Dairy Heifer Calf Policy was inaugurated. Under this policy the Live Stock Branch has collected from the Edmonton milk shed and distributed to organized Junior Dairy Calf Clubs, 104 dairy heifer calves. This service has been greatly appreciated by clubs in out-lying districts, where it has been impossible for them to obtain their requirements locally.

SWINE

In 1942, Alberta established new records in the swine industry. Thirty-five per cent of the hogs marketed in Canada were produced in Alberta, which now occupies the position of leading swine producing province in the Dominion. During the past four years farmers have increased their swine marketings 179% over the 1938 production. Over two million hogs were marketed in 1942 as indicated by figures in the following table:

Year	No of hogs Marketed	Increase over Previous Year	Estimated Total Value
1938	782,857		\$14,000,000.00
1939	979,898	25.16%	16,500,000.00
1940	1,485,382	51.58%	24,000,000.00
1941	1,950,659	31.32%	38,000,000.00
1942	2,182,342	11.88%	50,000,000.00

Slightly higher prices prevailed throughout the first ten months, and in October, when the 1943 "Bacon Agreement" was concluded, a further increase of \$1.50 to \$2.00 per hundred was obtained. These price increases have greatly helped to increase revenue to farmers in this Province.

Prior to harvesting, producers were faced with a shortage of coarse grains and had to rely upon wheat to a large extent to grow and finish their hogs. However, following the threshing this past Fall of the largest crop in the history of the Province, farmers are now assured of ample supplies of coarse grains for 1942 and 1943 requirements.

Lack of coarse grain for feeding in the early part of the year and the scarcity of farm labour had a deterring effect upon total production; otherwise the total increase would have been considerably higher than the 11.88% obtained.

Under the new "Bacon Agreement" the British Ministry of Food has asked for 675,000,000 pounds of bacon in 1943. This is a 50,000,000 pound increase over the 1942 requirements, and will require a 28% increase in swine production throughout the Dominion. Alberta producers are being asked to step up production another 20% in order to meet the requirements. If the heavy demand for breeding stock experienced last Fall is any criterion as to the general trend, then Alberta's farmers will be doing their part to assure the successful fulfillment of the bacon contract.

The demand for pure-bred stock increased throughout the year, and pure-bred breeders experienced their most profitable season in the past decade. At the close of the season there was not sufficient pure-bred stock available to meet requirements, and many farmers were unable to obtain pure-bred boars for their herds. There was an increase in the number of pure-bred stock sold at annual fall sales, and a substantial increase in the average price.

Pure-bred fall sales were held at Edmonton, Calgary and Lloydminster. At these sales, 218 pure-bred sows brought an average

price of \$43.35, and 239 pure-bred boars an average of \$42.73. In 1941, 394 pure-bred swine were sold at Fall sales for an average of \$36.90, as compared to 457 head sold in 1942 at an average of \$43.02 per head, an increase of \$6.12 per head.

At the Lloydminster Sale, 16 pure-bred swine brought an average price of \$39.72. A tabulated summary of sales at Edmonton and Calgary for 1940, 1941 and 1942 is set forth below:

EDMONTON SWINE SALE						
Breed	1940		1941		1942	
	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
Yorkshire Sows	58	\$ 24.86	52	\$ 27.50	75	\$ 39.87
Tamworth Sows	5	22.30			6	51.25
Yorkshire Boars	85	23.95	44	38.12	91	34.84
Tamworth Boars	10	17.10	1	35.00		
	<u>158</u>	<u>\$ 23.89</u>	<u>97</u>	<u>\$ 32.47</u>	<u>172</u>	<u>\$ 37.60</u>
CALGARY SWINE SALE						
Yorkshire Sows	87	\$ 24.94	98	\$ 39.88	124	\$ 45.34
Tamworth Sows	9	21.83	11	30.68	6	42.08
Yorkshire Boars	109	21.67	123	43.31	119	48.57
Tamworth Boars	25	29.84	22	31.59	20	45.25
Berkshire Boars	2	12.50	2	22.50		
	<u>232</u>	<u>\$ 23.70</u>	<u>256</u>	<u>\$ 40.28</u>	<u>269</u>	<u>\$ 46.70</u>

DOMINION-PROVINCIAL SOW DISTRIBUTION POLICY

Reports of this policy would indicate a successful year, with 32 Swine Improvement Associations organized and a total of 796 gilts purchased by members.

The Dominion Department of Agriculture has provided a pure-bred boar for each association organized, and to a large extent has been responsible for selection of gilts purchased by each association. Transportation costs on the movement of sows obtained under this policy are shared equally by the Dominion and Provincial Departments of Agriculture.

Members of this Branch have, at all times, enjoyed the closest co-operation with members of the Dominion Production Service in the administration of this policy.

SHEEP

Alberta continued to maintain its lead in wool production and sheep population. Wool production showed an increase of 440,000 pounds over 1941. Total wool production was 3,720,000 pounds with an average fleece weight of 8.4 pounds. The revised figures of sheep population for 1941 and the 1942 June survey show an increase of 126,000 sheep on Alberta farms.

Many small flock owners have been increasing the number of sheep in their flocks by retaining all good quality breeding ewes. A strong interest in sheep production developed, judging by the amount of correspondence received at this office.

Slightly higher prices were received for wool and mutton during the year. Expansion of the sheep industry will continue, and a substantial increase in wool production is anticipated in 1943.

With the demand for increased sheep production, pure-bred breeders received satisfactory prices and have disposed of all their surplus pure-bred stock by the end of the season. Excellent prices were obtained at the Fall Sales held within the Province.

Pure-bred sales were held at Edmonton, Calgary, Lethbridge, and Lloydminster. At these sales, 126 pure-bred ewes brought an average price of \$25.45, and 592 pure-bred rams an average of

\$38.20. In 1941, 758 pure-bred sheep were sold at Fall Sales for an average of \$26.91, as compared to 1942 sales of 742 pure-bred sheep at an average of \$35.63 per head. Below is a summary of the 1940, 1941 and 1942 sales held in the Province:

Breed	THE PURE-BRED SALES					
	1940		1941		1942	
	No. Sold	Av. Price	No. Sold	Av. Price	No. Sold	Av. Price
EDMONTON:						
Suffolk Ewes	10	\$ 11.60	34	\$ 14.70	4	\$ 15.88
Oxford Ewes	5	7.60	3	14.00	14	15.23
Shropshire Ewes	8	9.06				
Southdown Ewes	2	10.00	12	10.41	2	9.00
Hampshire Ewes	1	12.50	12	14.41	4	16.50
Totals	26	\$ 9.36	61	\$ 13.77	24	\$ 15.06
Suffolk Rams	32	\$ 24.63	78	\$ 24.17	73	\$ 28.87
Oxford Rams	39	17.67	38	14.89	50	33.70
Shropshire Rams	15	15.37	15	20.17	14	31.61
Southdown Rams	6	15.82	12	20.00	12	28.33
Hampshire Rams	36	19.29	46	28.50	53	41.51
	128	\$ 19.51	189	\$ 22.78	202	\$ 33.54
CALGARY:						
Suffolk Ewes	55	\$ 15.46	19	\$ 31.05	17	\$ 44.06
Shropshire Ewes	4	13.50	4	16.25	18	13.86
Southdown Ewes	11	16.45	30	20.33	28	24.91
Hampshire Ewes	86	15.53	37	24.00	63	27.94
	146	\$ 16.58	90	\$ 23.92	126	\$ 27.43
Suffolk Rams	89	\$ 29.01	79	\$ 42.12	125	\$ 48.44
Shropshire Rams	8	19.81	4	48.75	17	36.62
Southdown Rams	22	19.73	31	33.87	43	26.34
Hampshire Rams	138	21.12	123	39.92	89	48.31
Rambouillet Rams	4	15.00			6	45.00
	261	\$ 23.56	237	\$ 40.01	280	\$ 44.21
Grade Ewes	30	\$ 6.72	105	\$ 11.03	144	\$ 12.36
LETHBRIDGE:						
Rambouillet Rams			55	\$ 18.54	43	\$ 31.02
N. Z. Corriedales			5	29.80	7	45.00
Can. Corriedales			33	27.58	44	28.98
Mature Rams					4	44.25
			93	\$ 22.35	98	\$ 31.34

At the Lloydminster Sale, 12 pure-bred rams brought an average price of \$32.46.

SHEEP AND SWINE IMPROVEMENT POLICIES

These policies are designed to assist commercial sheep and swine producers in purchasing approved type sires. Regulations governing these policies require the farmer to submit an application accompanied by payment in full.

A very marked increase in the number of animals distributed through the policies is shown for 1942 as compared to previous years. Pure-bred sires for distribution under the policies are purchased directly from the pure-bred breeders in the Province, and at all the Fall Sheep and Swine Sales.

The Live Stock Branch administers the policies, approves the applications, and is responsible for the selection, purchase, and distribution of the pure-bred sires. The Department pays the transportation charges on the pure-bred sires to the nearest railway shipping point of the applicant. The numbers of pure-bred sires which have been distributed under the policies during the past four years are as follows:

Year	Swine Improvement	Sheep Improvement
1939	287	
1940	153	52
1941	224	69
1942	357	81

SHEEP EXPANSION POLICY

Early in the year the Agricultural Supplies Board at Ottawa embarked on a Sheep Expansion Programme, with the Dominion Government providing freight assistance on the shipment of breeding ewes, and the loaning of rams to beginners in the sheep industry. The Provincial Department of Agriculture co-operated with the Federal authorities in establishing the Expansion Programme, and members of this Branch devoted considerable time and effort in furthering the policy by purchasing ewes and arranging for shipment. Results were disappointing, as the number of ewes actually handled was much less than expected. It was apparent from the heavy correspondence received at this office in connection with the policy that very few farmers were able to finance the purchase of breeding stock. Many had equipment and facilities to handle a small flock, but due to lack of finances were unable to play their part in meeting the demand for increased production.

In all the work undertaken, the Department was ably assisted by Mr. W. S. Benson, Manager, Southern Alberta Sheep Breeders', Limited, Lethbridge, who as a liaison officer under the Expansion Programme, selected range ewes for shipment to various points within the Province, and also ewes shipped to other provinces. District Agriculturists arranged for the placing of a number of ewes within their own districts. The average price paid for grade ewes, ranging in age from one to five years, purchased through the Edmonton office, was \$10.38. Not a single enquiry was received for ewe lambs.

LIVE STOCK LISTING BUREAU

This service is of assistance to breeders in purchasing registered live stock, who are not eligible to apply for aid under the aforementioned policies.

A record is kept of breeding live stock offered for sale, and this information is available to enquirers.

Upon receipt of application accompanied by the necessary remittance, members of this Branch locate, purchase, and arrange for shipment of animals, carrier charges collect.

The applicants for this service comprise not only beginners in the pure-bred business, but also some of the long established and best breeders.

Live stock placed through the Live Stock Listing Bureau consisted of the following:

Cattle: 25 bulls, 15 cows or heifers.

Swine: 10 boars, 24 sows.

Sheep: 14 rams, 11 ewes.

CHICAGO MARKET FAT STOCK AND CARLOT COMPETITION

This is sponsored by the Union Stock Yard and Transit Company. The high quality of Alberta bred and fed beef cattle was again clearly exemplified by the awards received on steers exhibited by the University of Alberta, the only exhibitor from the Province this year.

Nine steers were awarded prizes out of a total of 10 steers shown in the single classes.

The following awards were received:

Angus: First, and champion heavyweight steer in competition with all breeds; also an eighth, ninth and tenth prize.

Shorthorns: Two third prizes, one sixth, and one eighth.

Herefords: Fifth prize.

Group of three Shorthorn steers: Fifth prize.

Group of three Angus steers: Seventh prize.

LIVE STOCK FEEDERS' ASSOCIATIONS

The source of credit made available to members of legally incorporated Feeders' Associations under the Feeders' Association Guarantee Act has been much appreciated by those taking advantage of this means of financing the purchase of feeder live stock. The formation of Feeders' Associations has well demonstrated their value.

Vast quantities of forage crops and grain, including much wheat, were marketed "on the hoof" through live stock feeding at enhanced values when compared to marketing similar feeds through the regular marketing channels.

A satisfactory spread in price was realized by cattle and lamb feeders in their feeding operations, resulting in substantial profits.

These associations have developed many new live stock feeders, and the feeder movement has rapidly expanded when it is considered that during the past feeding season approximately 140,000 lambs and 40,000 cattle were finished in feed lots operated by members of Feeders' Associations and commercial feeders, i.e., operators who purchase their feeder live stock for fattening purposes.

Two new associations were incorporated during the year, namely, the Battle River Feeders' Association Limited at Camrose, and the Cardston Feeders' Association Limited at Cardston.

Feeders in the Brooks district have again purchased feeder lambs and ewes from ranchers in southwestern Saskatchewan. Approximately 9,000 head were brought in to help meet feed lot requirements.

A much higher percentage of grass fat cattle were sold off ranges, thus curtailing the supply of feeder cattle. During the early Fall, good quality feeder cattle sold on the same high price basis as butcher cattle, rendering a very narrow spread in sight, considering the announced ceiling price for dressed beef. These circumstances, combined with the farm labour shortage, indicate a marked decrease in numbers of cattle being placed in feed lots for the ensuing feeding season.

VOLUME OF OPERATIONS OF ALBERTA FEEDERS' ASSOCIATIONS DURING
THE FEEDING SEASON OF 1941-1942

Association and Address	Cost of Animals	Cattle	Sheep	Total Membership	No. Members Feeding
Bow Valley Livestock Feeders' Ass'n, Brooks	\$ 90,499.31	385	5,654	111	25
Carstairs Livestock Feeders' Ass'n, Carstairs	21,200.00	380		8	8
Central Alberta Livestock Feeders' Ass'n, Lacombe	80,850.00	1,292	1,168	100	35
Edmonton and District Feeders' Ass'n, Edmonton	61,000.00	1,311		116	43
Innisfail Feeders' Ass'n, Innisfail	45,700.00	874	612	78	27
Lethbridge Feeders' Ass'n, Lethbridge	109,476.32	1,083	5,276	48	24
Olds Livestock Feeders' Ass'n, Olds	84,210.00	1,693		62	34
Raymond-Magrath Feeders' Ass'n, Magrath	125,410.77	1,402	6,541	115	29
Red Label Feeders' Ass'n, Raymond	99,720.93	1,434	3,696	42	20
South Slope Feeders' Ass'n, Brooks	38,244.67	136	2,831	53	18
Taber Livestock Feeders' Ass'n, Taber	108,843.85	1,469	1,142	71	27
U.I.D. Livestock Feeders' Ass'n, Glenwood	65,025.08	359	6,806	45	28
Vauxhall-Albion Ridge Feeders' Ass'n, Vauxhall	100,162.33	1,068	7,051	78	31
Vermilion and District Feeders' Ass'n, Vermilion	49,000.00	1,345	380	112	35
Wainwright-Edgerton-Chauvin Feed- ers' Ass'n, Edgerton	37,842.82	664		113	24
Totals	\$1,117,186.08	14,945	41,157	1,152	408

THE STOCK INSPECTION ACT AND THE BRAND ACT

Due to the heavy seasonal movement of cattle at Community Auction Sales and to cover-crop areas and feed lots, additional inspection service was necessary to enforce requirements of The Stock Inspection Act.

The Live Stock Branch appreciates the valuable assistance and support rendered by members of the Royal Canadian Mounted Police in this respect, and the report of the Force pertaining to stray, missing and stolen animals is most commendable.

Higher prevailing values for live stock have influenced producers in obtaining or renewing brands.

A supplement to the 1937 Brand Book has been printed and is now available.

During the year there were 2,376 new brands recorded to their respective owners, consisting of 1,719 cattle, 645 horses, 8 sheep, 2 fox, and 2 poultry; 149 transfers were registered; strays, searches and certified extracts numbered 302; renewals, 2,893 (cattle 1,236, horses 1,645; fox 10, sheep 1, and poultry 1), making a combined total of 5,720 transactions.

Compared with 1941, these figures show an increase of 522 cattle brands, 213 horse brands, 4 sheep brands, and a decrease of one fox brand, and poultry brands remained the same.

The approximate number of brands now in good standing in our registers are as follows:

Cattle Brands	14,706
Horse Brands	7,916
Poultry Brands	16
Sheep Brands	19
Fox Brands	61
	22,718

THE DOMESTIC ANIMALS (UNORGANIZED TERRITORY) ACT

Work continued throughout the year in the administration of this Act, relating to the establishment and maintenance of pound districts, and the disposal of estray animals.

There are 390 pounds now in operation.

RESTRICTED AREA PLAN

Some progress has been made in the testing of cattle for tuberculosis in definite areas.

The first general test has been completed in the following districts, which are now accredited areas, excepting Clover Bar:

Municipal District	No. Cattle Tested	No. Reactors
Clover Bar No. 517	6,004	71
Evergreen No. 427	8,730	32
Lampton No. 306	4,282	6
Lloyd George No. 457	8,985	53
Starland No. 307	5,389	6
Strathcona No. 518	9,975	31
Vimy No. 337	6,181	7
Waverley No. 367	10,492	6
Totals	60,038	212

The second general test is under way in M.D. Clover Bar No. 517, and the first general test is incomplete in the following districts: Lakeside No. 397, Haig No. 396, Dublin No. 366, Melrose No. 426, and Michichi No. 277.

It is most gratifying to note the extremely small percentage of reactors found in the areas tested, and this may be considered some criterion of the freedom from tuberculosis in cattle throughout the Province

THE HORNED CATTLE PURCHASE ACT

Money derived by the deduction of \$1.00 per head on all horned cattle offered for sale or shipment is utilized in defraying expenses incurred in administration of the several live stock improvement policies and correlated work.

WARBLE FLY POWDER

In an attempt to control to some extent the serious damage caused to cattle by warble flies, the Live Stock Branch made available at cost to organized groups of farmers, Warble Fly Powder, in units of not less than 24 pounds.

It is most regrettable that comparatively few stockmen made use of this service.

REPORT OF THE DAIRY COMMISSIONER

(D. H. McCALLUM)

In presenting the 1942 Annual Report, it will be noted that a report of the Milk Control Section of the Board of Public Utility Commissioners has been included as an appendix. It is felt that much useful information concerning the fluid milk trade in Alberta would be welcomed by those using this annual report for reference material, and our sincere thanks are proffered to Mr. G. M. Blackstock, Chairman of the Board, and also to Mr. A. T. Neale, Supervisor of Milk Control, for this additional information.

GENERAL REVIEW

The production of milk and milk products reached an all time high for Alberta during 1942. The total quantity of milk produced amounted to 1,789,709,700 pounds, which represents an increase of 1.9% over the previous record of 1941. Over two-thirds, or 69.1%, of the total milk supply was utilized in the manufacture of dairy products, while 30.9% was consumed or fed in the fresh fluid form. Manufactured products such as creamery butter, factory cheese, ice cream, evaporated milk, skimmilk and buttermilk powder, all showed substantial increases in production over the highest figures for any previous year.

Higher prices and increased production combined to raise the total value from \$27,376,772 to \$31,574,838, an increase of 15.3%. Only in 1919 and 1920 did the total value of dairy products exceed that of the past year. Exceptionally high prices were responsible for the high value at that time, when creamery butter averaged 55.45 cents per pound for 1920.

The production of creamery butter amounted to 36,985,909 pounds, while cheddar cheese reached 3,908,545 pounds. These figures represent increases of 4.7 % and 24.4% respectively over the previous high production of these products established during 1941. The production of skimmilk and buttermilk powder more than doubled during the past year. This move to further utilization of these by-products has been quite noticeable in recent years, and facilities are now available to supply local markets with these products.

While satisfactory increases in milk production were recorded during the winter and early spring months of 1942, lack of rainfall seriously affected pastures and milk flow during the latter part of April, May and early June. Following this period, the rainfall was so heavy that many roads became impassable, which made regular deliveries of cream and milk impossible. Harvesting was much delayed due to wet weather, and milk cows did not have the same opportunity of pasturing stubble fields as in normal years. Crops of fodder and coarse grains for winter feeding were exceptionally good, but unfortunately many districts report 30% to 50% of the grain still unthreshed, with a number of farmers not having a bushel of threshed grain for feed purposes. Considering these facts, and also that an acute shortage of labour existed on Alberta farms during 1942, milk production has been remarkable.

CHANGES DUE TO WAR MEASURES

The increased demand for war materials has seriously affected the manufacture of dairy equipment. Cream and milk shipping cans were not available in sufficient quantities to supply the demand, and some dairy factories placing their orders late were not supplied. Plant equipment, particularly pasteurizers lined with stainless steel, have been most difficult to secure. Orders must be accompanied with priorities, which adds to the difficulty of making replacements and additions to keep pace with increased production.

The production of milk for certain purposes was encouraged by means of subsidies paid by the Federal Government. Fluid milk producers in all areas not receiving a price increase after August 1st, 1941, were subsidized to the extent of 30c per 100 pounds commencing December 22nd, 1941. Milk used in the manufacture of concentrated milk products was also subsidized 40c per 100 pounds providing the initial price reached a certain figure; in Alberta this was \$1.58 per 100 pounds. Both of these subsidies were withdrawn April 30th, 1942. Commencing September 1st, a subsidy of 25c per 100 pounds was paid to fluid milk producers in areas where the retail price of milk had reached the ceiling price for that area or province, as established by the Wartime Prices and Trade Board. A subsidy of 6c per pound for all butterfat purchased for the manufacture of creamery butter was put into effect on July 6th. This subsidy was increased to 10c per pound commencing December 21st, and on the same date butter rationing, on the basis of eight ounces per person per week, was made effective.

The Dairy Products Board, Ottawa, realizing the possibility of a shortage of certain dairy products, ordered restrictions on the fat content and sales of ice cream, which is considered the least essential of the dairy products. The first order limited the fat content to 13.5%, which later was reduced to 10% with a tolerance of one-half (.5) per cent either way. Sales for civilian purposes in any three month period were limited by order to those of 1941.

Assistance from the Federal Government for insulating, refrigerating and enlarging cheese curing rooms has been in effect since 1939. Due to the difficulty in securing material and refrigerating equipment, this assistance was withdrawn late in 1942.

An order of the Wartime Prices and Trade Board respecting commencement, acquisition and expansion of businesses has curtailed the number of enquiries for new dairy factories. Another order by the same Board, dealing with the maximum loading of freight cars, threatened to create a severe handicap to the small creamery with limited output and storage space. Representations made by the industry were given special consideration, and the final decision did not seriously affect the small creamery, but at the same time accomplished its purpose of conserving transportation facilities.

The following statements include a summary of the production and values of dairy products for the past two years:

DEPARTMENT OF AGRICULTURE

QUANTITIES AND VALUES OF DAIRY PRODUCTS
(1942—Final)

	Pounds	Price	Total Value
Creamery Butter	36,985,909	\$.32	\$11,835,491
Farm Dairy Butter	12,100,000	.27	3,267,000
Cheddar Cheese	3,908,545	.2158	843,464
Farm Dairy Cheese	230,000	.1958	45,034
Ice Cream and Ice Cream Mix (Gals.)	928,907*	1.1951	1,110,181
Milk, Cream, Evaporated, Consumed, Fed to Animals or otherwise utilized			14,473,668
			<u>\$31,574,838</u>

*The total quantity of ice cream amounted to 1,015,635 gals. when converting the mix to ice cream

(1941—Final)

	Pounds	Price	Total Value
Creamery Butter	35,316,143	\$.3055	\$10,789,082
Farm Dairy Butter	14,040,000	.2555	3,587,220
Cheddar Cheese	3,140,978	.1955	614,061
Farm Dairy Cheese	225,000	.1755	39,488
Ice Cream and Ice Cream Mix (Gals.)	849,488	1.1240	954,847
Milk, Cream, Evaporated, Consumed, Fed to Animals or otherwise utilized			11,392,074
			<u>\$27,376,772</u>

DAIRY CATTLE

The Dominion Bureau of Statistics' estimate for the number of milch cows on Alberta farms at June 1st, 1942, was 366,800. While this indicates a considerable reduction from the 418,000 shown in our 1941 report, the census returns for 1941 indicate a revision to 362,064. On the basis of the revised figures, this indicates an increase of 4,736, or 1.3%. Since 1935 there has been a reduction of 98,400 in the number of milch cows, while the combined production of creamery butter and cheddar cheese increased by approximately 16,000,000 pounds, or 66%, during the period. These figures indicate a very definite increase in the average production per cow, but further increases are desirable if dairying is to take its place in a well balanced agriculture.

CREAMERIES

The same number of creameries (94) operated during 1942 as in 1941. The Alberta Produce Company, Calgary, discontinued its creamery operations at the end of July. Fire destroyed the Onoway Creamery early in September; however, the plant has been rebuilt, and expects to operate early in 1943. Both the City Dairy Creamery and the Purity Dairy, Lethbridge, have put new plants into operation during the year.

The average output of creamery butter per plant increased from 375,704 pounds in 1941 to 393,467 pounds during 1942. This represents a new all time high for the average output of Alberta creameries.

CHEESE FACTORIES

There were 20 cheese factories in operation during 1942, as compared with 18 during the previous year. Burns & Co., Camrose, added cheese equipment to their creamery early in the year, and on October 14th, the new Raymond Co-operative Cheese Factory and cold storage locker plant commenced operations. Late in the season the Ryley Cheese Factory was enlarged and remodelled to accommodate milk drying equipment. While the major operations will be devoted to drying skimmilk, cheese will also be manu-

factured. This combined cheese and milk drying plant is the first of its kind in Alberta.

While cheese production reached 3,908,545 pounds, representing a new all time high and an increase of 24.4% over the 1941 production, there was a noticeable drop in production during the closing months of the year, largely due to the fact that several factories were transferring large quantities of milk to fluid milk markets and drying plants.

The quality of cheese again showed an improvement, when the percentage of first grade increased from 78.6% to 81.0%. The quantity scoring 93 points or over which secured the Federal quality bonus of either one or two cents per pound, amounted to 1,640,000 pounds as compared to approximately 1,000,000 pounds during the previous year.

CREAM SUPPLY TO CREAMERIES

The following tabulation shows the quantity and quality of cream received at the various creameries during 1942. Similar figures for the two previous years have been added to facilitate comparisons.

	1942		1941		1940	
	Pounds	%	Pounds	%	Pounds	%
Cream Received	90,222,223		87,163,649		73,597,277	
Average Test		(35.0)		(34.6)		(34.4)
Butterfat:						
Table Grade	711,115	(2.3)	778,288	(2.6)	765,598	(3.0)
Special Grade	19,351,081	(61.4)	20,093,810	(66.6)	16,826,895	(66.4)
First Grade	10,228,758	(32.4)	8,369,065	(27.8)	7,097,072	(28.0)
Second Grade	1,084,455	(3.4)	749,951	(2.5)	613,493	(2.4)
Off Grade	161,568	(.5)	143,639	(.5)	44,513	(.2)
	31,536,977	(100.0)	30,134,753	(100.0)	25,347,571	(100.0)

It is disappointing to report a general lowering in the quality of cream. Larger percentages in the lower grades were reported in the month of May, and as the season advanced the lowering of quality became more apparent. A leaflet dealing with the production of special grade cream for buttermaking was prepared and widely distributed through the dairy factories. It is felt that the following factors were responsible for poorer quality; a heavy growth of strong flavoured feeds and weeds followed the heavy rains in June; lack of farm help, resulting in neglect to dairy equipment and proper cooling; cream was held and delivered in badly rusted cans and utensils that could not be replaced or retinned, and deliveries were not as regular or frequent due to wet roads and gas and tire conservations.

Inspectors of the Dairy Branch made 1,879 visits to dairy factories during the year, where the regulations dealing with the weighing, testing and grading of milk and cream were rigidly enforced. There were 103,370 shipments of cream checked for grade, while 30,773 samples of milk and cream were check tested for butterfat content.

BUTTER QUALITY

The following statement is a summary of the quantity and quality of Alberta butter graded during the past five years, as reported by the Dominion Department of Agriculture, whose function it is to place the score and grade on creamery butter:

DEPARTMENT OF AGRICULTURE

FEDERAL REPORT OF CREAMERY BUTTER GRADED (PASTEURIZED)
(56 pound boxes and samples)

	Total Pounds Graded	First Grade	Second Grade	Third Grade	Below Third Grade
1938	27,839,952	85.7	7.9	5.4	1.0
1939	27,219,976	86.9	7.0	5.4	.7
1940	27,243,216	88.1	7.1	4.4	.4
1941	32,037,992	88.4	6.9	4.1	.6
1942	33,614,392	84.1	10.2	5.0	.7

While it has been possible to report satisfactory increases in the percentage of Alberta butter scoring first grade in the reports for the previous four years, it has been disappointing to note the sharp drop in 1942. While a number of factors could be listed which played a part in this poorer quality, probably the most outstanding was the lack of experienced and properly trained plant workers.

There were only two exhibitions, namely, Brandon and Calgary, which had classes for creamery butter, and while the number of entries were smaller than usual, the exhibits from Alberta factories were successful in upholding the reputation that Alberta butter has achieved in former years.

SERVICES OF THE DAIRY BRANCH

COW TESTING AND HERD RECORDING

Interest in the cow testing service has been well maintained in spite of a labour shortage on the majority of dairy farms.

The following tabulation shows the number of herds, cows under test, those completing a lactation period or an eight months' record, and the average milk and butterfat production for the cow testing year, ending October 31st, 1942. For sake of comparison, similar figures for the previous year have been included:

	1942	1941
Number of herds under test	180	187
Number of cows under test	2,052	1,974
Number of cows completing a lactation or showing an eight months' recording	1,272	922
Average production of milk	7,845	7,478
Average production of, butterfat	295.6	284.8

NOTE: The average production of milk and butterfat is based on the cows completing a lactation or showing an 8 months' recording.

It will be noted from the above table that while the number of herds under test showed a slight decrease, there were actually a greater number of cows being tested in 1942 as compared with the previous year. This indicates that the owners of large herds are anxious to secure the necessary information to build for higher production, even under extreme difficulties. The most significant figures in this table are those which indicate a higher average production of both milk and butterfat. There was an increase of 367 lbs. of milk and 11 lbs. of butterfat per cow over the figures for the corresponding period ending October 31st, 1941. It is to be hoped that future reports will show still further increases in production and a greater number of cows under test.

Reports were prepared and forwarded during the year to all herd owners on the service. These reports showed the averages for all cows under test and those of their particular herd.

The policy of issuing graded certificates, depending on the production, was continued. Following is a tabulation setting forth the number of these certificates issued during the past two years:

	1942	1941
Gold Seal	52	29
Red Seal	251	164
Blue Seal	489	322
Statements	236	191
	<u>1,028</u>	<u>706</u>

A change in the manner of collecting fees was announced early in the year. This change will bring all the fees forward at one time and greatly simplify the office work.

It was unfortunate for members of the service that the Cow Testing Supervisor resigned early in the year to join the R.C.A.F., and a capable replacement could not be secured. The periodic visits of the Supervisor furnished much useful information to the herd owners, and it is to be hoped that this work will be continued at an early date.

DAIRY BRANCH LABORATORY

The analytical service of the Dairy Branch Laboratory was continued, and some aspects of it were extended during the year. Mould and yeast analysis of creamery butter constituted a major portion of the work, and 2,975 samples were examined. The mould count of the butter was maintained at a low level throughout the year, and was reflected in an almost complete absence of complaints of mouldy butter by the trade.

The following table indicates the trend in the number of butter samples analyzed for mould and yeast content, also the percentage of counts in each class since the commencement of this work in 1925:

Year	No. of Samples Analyzed	Classification			
		Excellent (0-10) %	Good (11-50) %	Fair (51-100) %	Poor (over 100) %
1925	686	3.6	12.7	12.1	71.6
1930	2,799	35.7	20.3	10.3	33.7
1935	2,177	55.4	17.9	7.7	19.0
1940	3,013	64.6	16.0	7.2	12.2
1941	3,161	63.9	17.1	7.4	11.6
1942	2,975	65.1	16.1	5.5	13.3

Assistance was given those creameries having difficulties in securing a satisfactory low mould and yeast count on their butter. This assistance usually took the form of a survey in which a series of samples were taken, covering each step of manufacture from raw cream to the finished butter. The survey rarely failed to locate the source of contamination, and proved of considerable value to the industry. Similar surveys were conducted at plants experiencing butter defect thought to be of bacterial origin.

The cheese starter service, inaugurated two years ago, was continued. It provided the cheesemaker with a pure active culture which has undoubtedly been a factor in the improvement in quality of Alberta cheese and in making it more uniform.

In addition to the analytical work, the Director has acted as a technical adviser to the dairy industry. Problems involving the chlorination of water, quality of product and mechanical losses in manufacture were carefully considered, and much useful information supplied. The preparation and distribution of testing solutions, chlorine stock solution and indicators was continued by the laboratory.

The number of milk samples tested for butterfat content has greatly increased during recent years, due to the larger number of

cows under test and fewer samples being tested at association centres.

At the end of December, the laboratory was moved from the Dairy Department, University of Alberta, where it has been located during the past 11 years. The new quarters are in the Animal Pathology Laboratory, Terrace Building. It was felt that the Dairy Bacteriologist could serve the Department of Agriculture in a wider field in this new location. Creamery workers are invited to visit the laboratory and discuss their particular problems.

The writer wishes to take this opportunity of publicly thanking Dr. H. R. Thornton, Head of the Dairy Department, University of Alberta, for the splendid co-operation and many courtesies extended to our laboratory workers, and also to the Faculty of Agriculture for accommodation and use of equipment.

DAIRY COST STUDY

In the past year the study has been extended to include a survey of dairy farms in the Red Deer area. Seventy-nine farms had accounts opened and set up in May. These co-operators have had second round calls during the fall and their books brought up to date. There were five drop-outs because of ill-health or loss of former help. Much difficulty is being experienced, at present, in this area to continue dairy production owing to the labour shortage and the additional heavy job of digging out daily feed supplies from the snow drifted fields. Where the labour shortage was most serious, the tendency is to cut down on dairying by sales or by putting calves on the cows. By doing this, an attempt can be made to continue to raise as many or more hogs than before.

The Calgary area had 44 books completed for its first year of the study. Thirty-eight were re-opened and have had second calls. At Lethbridge seven farms are continuing the second year. Forty-four farms from the Edmonton-Wetaskiwin area wished to continue to have their account books analyzed, and have been retained on the study to enter their fourth year. Books closed for the account year 1941-42 total 281. Analysis of these books was started early in the summer. Steady progress in clerical work on the records was made possible by periodic office work by the fieldmen when field work was difficult.

More complete analysis on the second year of the study has now been worked out. Tables regarding number of heifers raised show one-third, or the largest single group of wholemilk farms, was raising less than one heifer calf for every five cows in the herd. Inspected cream and churning cream had over half raising one heifer to three or less cows. This indicates that most of the cream producers intend to keep all their heifer calves born, but wholemilk shippers do not.

There was no marked relationship between the number of heifers kept and the operator's labour earnings, nor with the cost per pound of butterfat, but the relation was more distinct with feed cost and total dairy cost per animal unit. The relation is that the most heifers were raised where costs per animal were lowest.

It was also found that the higher rates of grain feedings were closely tied up with increased production per cow, but still the cost per pound of butterfat was increased, as the cost per cow increased faster than the production. This was a reversal of our first year's findings when, with grain only worth $\frac{2}{3}$ c per pound, the increased

grain feeding resulted in lower costs per pound of butterfat. The second year grain values averaged 1c per pound at the farm.

INSTRUCTIONAL WORK

The Dairy Branch once again co-operated with the Dairy Department at the University in conducting the regular four weeks' Creamery Short Course. A special course in Babcock testing for ladies was held during the past spring under similar arrangements. This was a one week course, and promises to become an annual affair for the duration.

Regional conferences for buttermakers and cheesemakers were held at a number of points, and in addition, members of the inspection staff have made instructional work with these makers one of their main functions. Dairy field days, agricultural short courses and radio audiences were all addressed by members of the staff. Bulletins and leaflets on timely subjects pertaining to dairy-ing were prepared and distributed.

BUTTER WEIGHING

The check weighing of butter and the issuing of weight certificates on butter exported from the Province was continued during 1942. There were 5,742 boxes check weighed and certificates issued on a total of 45,523 fifty-six pound boxes.

REVENUES

A total of \$615.00 was received from creamery and cheese factory licenses, \$566.00 from grader's and tester's licenses, \$154.00 from cow testing fees, and \$178.50 from the cheese starter service, making a total of \$1,513.50 for revenues, as compared to \$1,475.50 the previous year.

STAFF CHANGES

R. P. Dixon left the position of Cow Testing Supervisor to join the R.C.A.F. on May 29th.

R. H. Powley, Creamery Inspector for the Red Deer district during the past two years, left October 21st to join the R.C.A.F.

C. A. McBride was appointed November 12th to fill the position vacated by Mr. Powley.

DEPARTMENT OF AGRICULTURE

DATA

The following tables set forth the details of production for 1942 and statistical information concerning dairying in former years.

MONTHLY AVERAGE NET PRICES ESTIMATED PAID BY CREAMERIES IN ALBERTA
PER POUND OF BUTTERFAT IN "SPECIAL GRADE" CREAM,
F.O.B. SHIPPING POINT, FOR FOUR YEARS

	1942		1941		1940		1939	
	F.O.B.		F.O.B.		F.O.B.		F.O.B.	
	Cents	%	Cents	%	Cents	%	Cents	%
January	31.0	(4.5)	32.5	(4.5)	24.5	(4.5)	17.2	(4.2)
February	31.0	(4.6)	31.0	(4.6)	24.0	(4.7)	16.7	(4.0)
March	31.6	(5.1)	32.0	(5.1)	24.3	(5.0)	16.5	(4.4)
April	32.3	(6.3)	29.5	(6.6)	23.5	(5.9)	16.5	(5.9)
May	32.3	(9.4)	27.0	(10.9)	19.7	(9.5)	16.4	(10.5)
June	31.6	(13.4)	28.0	(14.2)	18.1	(15.8)	17.5	(15.6)
July	31.2*	(14.8)	31.0	(14.1)	17.5	(15.6)	17.7	(16.0)
August	31.2	(13.3)	34.0	(12.3)	17.1	(13.0)	17.0	(13.1)
September	32.0	(10.9)	32.5	(10.3)	17.0	(8.9)	19.8	(9.1)
October	32.7	(7.4)	29.5	(7.4)	22.3	(6.9)	24.5	(7.2)
November	33.5	(5.4)	29.5	(5.5)	26.1	(5.3)	24.5	(5.4)
December	33.8	(4.9)	30.0	(4.5)	29.3	(4.9)	24.5	(4.6)
The Year	31.94	(100.0)	30.34	(100.0)	20.75	(100.0)	18.62	(100.0)

*The estimated average prices paid for Special Grade butterfat during 1942 do not include the Dominion Government Subsidy. This subsidy was 6c per lb. commencing July 6th, but was increased to 10c per lb. December 21st.

NOTE: The figures enclosed in brackets represent the monthly percentages of the cream receipts for the year.

CREAMERY BUTTER PRODUCTION

Year	Creameries	Pounds Butter	Selling Value	
			Total	Cents per lb.
1920	53	11,821,291	\$ 6,555,509	(55.45)
1925	99	19,630,101	6,959,059	(35.45)
1930	92	17,716,744	4,968,227	(28.04)
1935	97	23,094,707	4,588,917	(19.90)
1940	95	29,796,520	6,647,604	(22.31)
1941	94	35,316,143	10,789,082	(30.55)
1942	94	36,985,909	11,835,491	(32.00)

FACTORY CHEESE PRODUCTION

Year	Factories	Pounds Cheese	Selling Value	
			Total	Cents per lb.
1920	7	398,750	\$ 110,355	(27.70)
1925	14	1,473,835	306,604	(20.80)
1930	8	1,035,352	175,392	(16.94)
1935	11	1,364,526	168,280	(12.33)
1940	18	2,705,853	385,584	(14.25)
1941	18	3,140,978	614,061	(19.55)
1942	20	3,908,545	843,464	21.58)

TOTAL ANNUAL VALUE OF DAIRY PRODUCTS

1900	\$ 546,476	1930	18,675,500
1910	7,855,761	1935	14,252,500
1915	15,896,586	1940	19,532,344
1920	34,000,000	1941	27,376,772
1925	23,002,000	1942	31,574,838

MILCH COWS

Year	Cows	Year	Cows
1901	46,101	1931	385,000
1906	101,235	1936	458,200
1911	147,687	1940	416,800
1916	277,324	1941	362,064
1921	432,838	1942	366,800
1926	436,500		

APPENDIX

Milk Control.

The establishment of Milk Control in the Province of Alberta in 1933 was due for the most part to the depression, which between 1929 and 1939 involved the whole North American Continent in economic distress. Milk is a definite immediate cash crop, the returns being available day by day to the individual producer-distributor, or twice monthly to the shipper to a plant.

The depression affected the price of all agricultural products and curtailed the market for them. It was natural for farmers and

others seeking relief from economic distress to turn to the production and distribution of milk as a partial solution of their financial worries. The natural result happened, and it happened very quickly. There was very soon an over-abundance of milk on the market. Then, too, it must be remembered that purchasing power declined to a low level, and the inexorable law of supply and demand came into operation. When commodities are abundant and purchasing power is low the price of goods falls, and those who control them immediately enter into the keenest type of competition to find a market. Many farmers had permanently established themselves as dairy farmers, and it was to those farmers that the distributing plants looked for their supplies of milk. Those established farmers were under the necessity of complying with health laws, which involved the construction of expensive buildings, the maintenance of those buildings with regard to health standards, the testing of herds and such matters which affected overhead in a marked degree. The temporary adventurers into the milk business did not suffer from these economic handicaps, and the price of milk reached such a low level that the regular producer was being slowly forced into bankruptcy, and in the end out of business. Such a progression of events could only result in a failure of supply or deterioration of quality, and perhaps both.

The established dairy farmers made application to the Provincial Government for such legislation as would tend to stabilize the industry, and as a result The Public Utilities Act was amended, placing the control of the production and distribution of milk under the jurisdiction of The Board of Public Utility Commissioners.

The Board was faced with several difficult problems, all of which had in some measure to be solved immediately, or at least constructive policies had to be inaugurated at once dealing with the different phases of the milk industry. The consumer and producer price of milk was a factor of primary importance, and hearings were held in Calgary and Edmonton in order that the Board might arrive at a just price to be paid to the producer and a just price to be paid by the consumer. At these early hearings the Board of necessity was obliged to rely upon evidence given by individual farmers, many of whom had insufficient data upon which a sound judgment could be based, but on the whole the prices arrived at by the Board were surprisingly accurate when related to evidence as submitted at later hearings based upon the findings of trained and skilled economists.

The immediate effect of the Board's first price order was to increase the price to the producer leaving the consumer price as it was before, but of necessity reducing the spread to the distributor. Later a survey was conducted by Mr. F. G. Cottle, C.A., assisted by Mr. C. H. Morton, C.A., auditors to the Board, who endeavoured to ascertain by cost accounting methods the cost of processing and distributing milk, and the figures established by Messrs. Cottle and Morton at that time are still used by the Board as the basis of spread allowed to the distributors.

Between June 1st, 1939, and May 31st, 1940, a survey into the cost of production was conducted at the instance of the Provincial Department of Agriculture, The Board of Public Utility Commissioners and the Department of Political Economy, University of Alberta, by Mr. H. L. Patterson, of the Marketing Service Economics Division, Department of Agriculture, Ottawa. His method was to select a definite number of farms in the Edmonton milk shed in

which he installed a simple but comprehensive system of accounting, and from the figures thus obtained over a period of one year, he submitted to the Board an important report, in which his final conclusion was that the average cost of producing 100 lbs. of milk, in the year mentioned, was \$1.78. This survey is still being continued in Edmonton, and the Board hopes to be able to make it a permanent feature of its work so that it will have at all times accurate evidence as to production costs. Beginning in June, 1940, a similar survey was instituted for the Calgary and Lethbridge milk sheds. It is alleged that there is a marked difference in the cost of producing milk for the fluid trade in the northern as compared with the southern parts of the Province, and when Mr. Patterson's survey in Calgary and Lethbridge has been completed the Board will then have the actual facts to enable it to deal properly with milk prices in these areas. The Board hopes to be able to continue the survey in the southern part of the Province as it has done in the northern.

In order to supplement the work done by Messrs. Cottle and Morton, the Board retained Messrs. Harvey & Morrison, C.A., Calgary, to make a complete investigation in to the operation of all the plants in the cities of Edmonton and Calgary, for the purpose *inter alia* of ascertaining the ultimate destination of every pound of milk entering a plant, and to satisfy itself that the producer is being properly paid by the plants on the basis of use to which the milk is being put. It is hoped that a further cost survey can be made in the near future. The milk distributors in this Province maintain that the spread allowed by the Board is inadequate. The Board, however, does not propose to make any change in this spread until cogent evidence warrants doing so. In protecting the producer from exploitation, and in attempting to be fair to the distributor, the Board accomplishes something of prime importance to the whole community. Through its efforts (coupled with the maintenance of rigid standards by the health authorities), there is being delivered to consumers a supply of pure milk of high quality and standard at the lowest possible price.

Policies.

The Board then had to consider the number of persons engaged in the fluid milk trade and had the problem of determining what steps, if any, should be taken to reduce that number—admittedly many more than were required to supply the controlled areas with fluid milk.

A licensing system was imperative, but the Board decided that it would be unfair to attempt to decide that some persons engaged in the milk business should have a license and that others should not, and so in an endeavour to be fair and equitable, granted to every person in the milk trade at the time of the institution of milk control a license which permitted him to continue in that business. It, however, decided further that if and when any licensee decided to go out of business, no new license should be issued to another person to take his place unless the person in question was selling his whole business to some other person who was efficient and of whom the Board would approve. The adoption and the continuation of this policy has resulted in a substantial drop in the numbers of those engaged in the fluid milk trade, and at the present time the number of licensees is just sufficient to take care of immediate demand.

A further problem must be faced if the present trend of increased consumption continues. The Board will require to be particularly mindful of the conditions which obtained in 1933, and shape its policies so that it can augment the milk supply as occasion requires and at the same time, when the emergency comes to an end, will not be faced with an excessive number of licensed producers and an over-abundance of milk.

Quotas.

The relationship of the individual producer to the plant to which he ships required consideration, and it was finally determined that a system of quotas should be instituted. The quota, which has a very definite fixed meaning in the milk trade, may be described as that amount of milk which the holder of the quota is obliged to ship to the distributor 365 days of the year. The maintenance of a shipper's quota is of the utmost importance. It tells him how much milk he will be required to provide during the year, and so permits him to make suitable arrangements as to his herd and the accommodation therefor, and his feed situation and the like. In order that this quota should be maintained a system of penalties was introduced whereby, if a shipper either deliberately or through force of circumstances ships short to his quota during a complete period of six months, his quota is reduced by the amount of his average short-shipments during that period. The original basis of the quota given to each shipper was the average daily shipments made by him during a period of several years prior to the institution of milk control.

The quota system does two things: it ensures permanency to the shipper and enables the plant to know within a reasonable approximation, the amount of milk it will receive each day.

Control has been established in the cities of Edmonton, Calgary and Lethbridge. For some reason the city officials, the health officials and the distributing plants in Medicine Hat do not desire milk control. At the same time, the plants and the producers in the Medicine Hat milk shed follow quite closely the practices of the Board as they apply to the City of Lethbridge, and Medicine Hat, in effect, has milk control without the actual supervision of the Board. The same is true of the City of Wetaskiwin, and to a lesser extent of the Town of Olds. The other controlled areas are Camrose, Red Deer, Crow's Nest Pass and Bowden.

The Crow's Nest Pass, which is in the mountains and is purely a mining area, presented special problems. In that area many people kept cows in the summer time, pastured them in back lanes and on vacant lots, and offered severe competition during the summer months to the permanent local milk distributors. In the winter time the cow went to the butcher or to a neighbouring ranch for winter pasture, leaving the local distributor with the added burden of winter supply without the compensation of flush summer production. The area is twenty miles long and twelve miles wide, and includes all the towns, villages and hamlets in the Crow's Nest Pass.

The Bowden controlled area comprises sections 13, 14, 15, 22, 23, 24, 25, 26 and 27, all in township 34, range 1, west of the 5th meridian, and includes the Village of Bowden. Control became necessary purely from local conditions, but the immediate reason was unethical competition which forced the permanent local distributor out of business.

No area is brought under control until a public hearing has been held and until clear evidence has established the necessity for control.

The immediate result of milk control in the areas described has been the stabilization of the dairy industry as it applies to the fluid milk trade. The number of shippers is adequate to take care of fluid consumption plus reasonable plant requirement and the overabundance of milk and consequent unfair competition, which precipitated the need for control in 1933, has completely disappeared in these areas.

As a result of the war and the danger of inflation caused by increased purchasing power and lack of consumed goods, the Federal Government, acting under its emergency powers, created the Wartime Prices and Trade Board, which in turn created a Dairy Products Division, under the directorate of Mr. J. G. Taggart, Food Co-ordinator, Mr. Frank S. Grisdale, Deputy Food Co-ordinator, and Mr. J. Peter Nadeau, Director of Dairy Products Division, Ottawa. The Public Utilities Board has attended meetings in Ottawa on four different occasions with regard to production and distribution of milk and in relation to milk prices. The availability of supply and the stabilization of milk prices was considered to be an imperative necessity by reason of the fact that milk forms a principal item in the diet of practically every person in the Dominion of Canada. The Wartime Prices and Trade Board has availed itself of the machinery established by the various Provincial Legislatures in the creation of local milk boards, and has made use of that machinery in carrying out its policies. The immediate result has been that the policies of the Dominion Government have been put into force quickly and effectively, but have necessitated a vast amount of additional work to be performed by the Provincial Milk Boards.

It was soon realized that the price ceiling established during the base period for milk could not be maintained. Feed did not come under the price ceiling nor did labour, and these are two very important items in the cost of milk production. An increase in price to the producers became essential, and at the same time it was desirable that there should be no increase in the price to the consumer. Accordingly, between 22nd December 1941, and 30th April, 1942, a subsidy was paid by the Dominion Government to all producers of milk for the fluid trade. The subsidy amounted to 30c per 100 lbs. The Board assumes that the subsidy was discontinued in April, 1942, for the reason that pasture would then be available, that labour would be freer, and that a substantial portion of the farm problems would disappear during the summer months of 1942. That hope was not quite realized, and the Dominion Government again realized the necessity of the payment of a subsidy to the producers in order that supply might be maintained on the one hand, and on the other, that the price to the consumer should not be increased. Accordingly, there has been paid since 1st September, 1942, to producers of milk for the fluid trade by the Commodity Prices Stabilization Corporation, Ltd., a subsidy of 25c per 100 lbs. This did not completely meet the situation, and commencing with 16th December, 1942, a consumer subsidy of 2c per quart is being paid by the Commodity Prices Stabilization Corporation, Ltd.

The lawful price of milk is not changed. The distributors still receive the price fixed by the Board of Public Utility Commissioners for each quart of milk sold, but the Commodity Prices

Stabilization Corporation, Ltd., pays 2c of that price and the consumer pays the balance.

The consumer subsidy is not restricted to controlled areas, but is payable to every milk distributor in the Dominion. The administration of this subsidy payment has been delegated to the Board of Public Utility Commissioners, which involves the fixing by the Board of milk prices in all areas throughout the Province—this again has cast an additional burden of work on the Board.

Prior to March, 1942, three grades of cream were authorized to be sold by the Board at fixed prices; these were the sub-standard 10%, table cream and whipping cream. In order to introduce much needed economies in milk distribution, the Board decided to limit cream to two varieties, viz., 10% and whipping cream. This order of the Board has been superseded by an order of the Wartime Prices and Trade Board whereby the only creams which may now be sold are 10% and table cream, having a butterfat content of not more than 18.9%. The reason for this curtailment in the butterfat content of cream is to conserve butterfat for other much needed products, the principal of which is butter. Butter in increasing volume is required for domestic consumption, both military and civilian, created by increased purchasing power, and the Government has adopted this expedient as a conservation measure. Further curtailment of butterfat content in cream is a distinct possibility.

Order No. 124 of the Wartime Prices and Trade Board was designed, in part, to afford an effective means of control of prices throughout the whole of Canada. There is a remarkable variation in the price of fluid milk throughout the Province of Alberta, ranging from the high of 12c per quart in the three principal controlled areas, to a figure as low as 6c per quart. In many points where milk is sold below 9c or 10c per quart, it is generally found that the producers have free pasture, use unpaid family labour and either have no distribution costs or the consumer takes delivery at the point of production.

The Public Utilities Board was given power by Order No. 124 to increase prices up to the ceiling of 12c per quart, and the Board has consequently been charged with the responsibility of making price adjustments where necessary throughout the whole of the Province. Its orders in this respect, however, require the concurrence of the Wartime Prices and Trade Board, Ottawa. When necessary, an actual investigation is made if a price adjustment is asked for, but in the majority of cases the Board has sufficient knowledge of production and distribution costs and is able to make price adjustments without the necessity of a formal investigation.

The exigencies of the war made it necessary for the Board to insist upon certain economies being put into force by distribution plants. These economies may be briefly stated to be as follows:

1. No new dairy product in liquid form to be introduced for sale.
2. The limitation of one type of cream.
3. The limitation of containers to be used in the selective types of fluid milk.
4. One delivery per day and that only by means of the regular delivery, with an exception in favour of hospitals.
5. The limitation of credit sales.
6. The limitation of returns from stores.

All these economies were approved by the Wartime Prices and Trade Board, and have been of material assistance to the milk trade at large in the controlled areas.

Tables.

1. Per Capita, per diem, Consumption of Fluid Milk, in Pints, Monthly for 1942.
2. Consumption of Fluid Milk in the Cities of Calgary, Edmonton, and Lethbridge, Monthly, 1942.
3. Consumption of Fluid Cream in the Cities of Calgary, Edmonton and Lethbridge, Monthly, 1942.
4. Fluid Milk Consumption in Cities of Edmonton, Calgary and Lethbridge, 1938-1942.
5. Fluid Cream Consumption in the Cities of Edmonton, Calgary and Lethbridge, 1938-1942.
6. Fluid Milk Purchases by Calgary, Edmonton and Lethbridge Distributing Plants, 1938-1942.
7. Summary of Milk and Cream Producers Operating on December 31st, 1942, under Board of Public Utility Commissioners' License.
8. Summary of Milk and Cream Distributors Operating on December 31st, 1942, under Board of Public Utility Commissioners' License.
9. Effective Milk and Cream Prices in Alberta Controlled Areas.

TABLE 1
PER CAPITA CONSUMPTION OF FLUID MILK, IN PINTS, MONTHLY FOR 1942
(To include Cream Consumption Converted to Milk Equivalent)

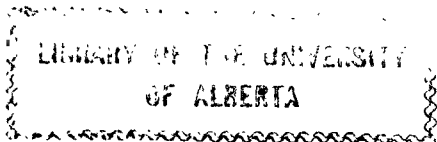
Area	PINTS, PER DIEM											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Calgary	.95	.983	.99	.933	.933	.99	1.04	1.05	1.074	1.075	1.096	1.015
Edmonton	.904	.933	.936	.896	.873	.889	.817	.824	.877	.907	.945	.961
Lethbridge	.76	.804	.806	.766	.768	.775	.75	.778	.823	.819	.848	.806

TABLE 2
CONSUMPTION OF FLUID MILK IN THE CITIES OF CALGARY, EDMONTON AND
LETHBRIDGE, MONTHLY, 1942

Area	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Qts.	Qts.	Qts.	Qts.	Qts.	Qts.	Qts.	Qts.	Qts.	Qts.	Qts.	Qts.
Calgary	895,190	841,953	940,892	898,728	928,353	969,242	1,076,693	1,081,308	1,091,295	1,124,534	1,094,360	1,026,763
Edmonton	959,469	902,990	996,035	968,602	981,869	988,128	924,662	938,632	961,503	1,017,244	1,015,661	1,099,852
Lethbridge	118,165	109,274	122,064	120,175	122,850	121,244	124,440	128,843	129,853	133,830	135,627	137,224

TABLE 3
CONSUMPTION OF FLUID CREAM IN THE CITIES OF CALGARY, EDMONTON
AND LETHBRIDGE, MONTHLY, 1942

Area	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Qts.	Qts.	Qts.	Qts.	Qts.	Qts.	Qts.	Qts.	Qts.	Qts.	Qts.	Qts.
Calgary	81,470	74,293	81,860	77,491	82,078	75,239	79,731	78,371	75,807	79,004	81,745	82,749
Edmonton	90,720	72,983	81,689	76,964	77,197	72,759	73,164	72,061	75,479	82,182	85,291	84,300
Lethbridge	9,431	9,228	10,283	8,904	9,882	9,359	8,727	9,004	9,976	11,119	10,575	11,292



DEPARTMENT OF AGRICULTURE

TABLE 4
FLUID MILK CONSUMPTION IN CITIES OF EDMONTON, CALGARY
AND LETHBRIDGE, 1938-1942

Area	1938 Quarts	1939 Quarts	1940 Quarts	1941 Quarts	1942 Quarts
Calgary	8,834,126	8,983,853	9,364,294	10,043,712	11,967,311
Edmonton	10,238,447	10,349,471	10,381,263	10,823,425	11,763,647
Lethbridge	1,415,470	1,440,907	1,488,834	1,517,788	1,503,589
Totals	20,488,043	20,774,231	21,234,391	22,384,925	25,234,547

TABLE 5
FLUID CREAM CONSUMPTION IN CITIES OF EDMONTON, CALGARY AND
LETHBRIDGE, 1938-1942

Area	1938 Quarts	1939 Quarts	1940 Quarts	1941 Quarts	1942 Quarts
Calgary	849,611	860,197	907,358	967,339	949,838
Edmonton	976,039	976,598	962,929	962,911	934,799
Lethbridge	95,627	93,824	101,691	104,357	117,780
Totals	1,921,277	1,930,619	1,971,978	2,034,607	2,002,417

TABLE 6
FLUID MILK PURCHASES BY CALGARY, EDMONTON AND LETHBRIDGE
DISTRIBUTING PLANTS, 1938-1942

Area	1938 lbs.	1939 lbs.	1940 lbs.	1941 lbs.	1942 lbs.
Calgary	30,138,121	30,921,645	31,125,975	33,526,356	37,971,410
Edmonton	25,691,571	26,668,040	26,205,032	27,478,447	31,392,466
Lethbridge	3,012,288	3,204,413	2,696,664	3,986,417	5,398,593
Totals	58,841,980	60,794,098	60,027,671	64,991,220	74,762,469

TABLE 7
SUMMARY OF MILK AND CREAM PRODUCERS OPERATING ON DECEMBER 31st,
1942, UNDER BOARD OF PUBLIC UTILITY COMMISSIONER'S LICENSE

Controlled Area	Milk	Cream	Total
Calgary	186	111	297
Camrose	8	8	16
Crow's Nest Pass	6	1	7
Lethbridge	24	7	31
Edmonton	188	77	265
Red Deer	18	20	38
Totals	430	224	654

TABLE 8
SUMMARY OF MILK AND CREAM DISTRIBUTORS OPERATING ON DECEMBER 31st,
1942, UNDER BOARD OF PUBLIC UTILITY COMMISSIONER'S LICENSE

Controlled Area	Milk	Cream	Total
Calgary	11	2	13
Camrose	2		2
Crow's Nest Pass	7		7
Edmonton	27	3	30
Lethbridge	4	1	5
Red Deer	4		4
Bowden	1		1
Total	56	6	62

TABLE 9
MILK AND CREAM PRICES EFFECTIVE JANUARY 1st, 1942, FOR ALBERTA
CONTROLLED AREAS

Area	MILK		CREAM		
	Price to Producers per 100 lbs. (3.6% B.F.)	To Consumers per Quart	To Producers per lb. B.F.	To Consumers 10% Sub- standard per Pint	To Consumers 18% B.F. per Pint
Calgary	\$2.70	*12	\$.45	\$.17	\$.28
Camrose	2.28	*11	.45		.25
Crow's Nest Pass	2.63	*12	.45	.17	.28
Edmonton	2.58	*12	.45	.17	.28
Lethbridge	2.55	*12	.45	.17	.28
Red Deer	2.28	*11	.45		.25
Bowden	2.28	*11	.45		.25

*Lawful quart price—Subject to 2c per quart Consumer Subsidy authorized by Order No. 195 of The Wartime Prices and Trade Board, Ottawa, effective December 16th, 1942.

REPORT OF THE POULTRY COMMISSIONER

(C. W. TRAVES)

As was predicted in the 1941 report, that year proved to be the turning point for the poultry industry of Canada. The impetus given by the relatively high levels for egg and poultry meat prices coupled with a fairly heavy export demand for Canadian eggs and with every indication that the price levels would increase during 1942 and that the export demand would be even larger than for 1941, the expansion that took place in the poultry industry of Canada could almost have been taken for granted. Although poultry raising, like gardening, is carried on by more people in Canada than in any other phase of agriculture, the fact that the poultry raisers had been struggling along for years on very low margins of profits and, in fact, all too often with their markets below the cost of production, tended to retard to a certain extent the full development that might have taken place. In spite of this, the upward trend was very gratifying and, generally speaking, most of it was on a fairly sound basis.

Alberta poultry raisers were well in line with those in the other provinces, and Alberta was the record province to reach the objective set for the export contract quotas.

A comparison between the 1941 and 1942 poultry products figures for Alberta illustrates the present trend.

POULTRY POPULATION AND VALUE, 1941

	Number	Price per Unit	Value
Hens and Chickens	7,901,000	\$.65	\$5,135,600
Turkeys	659,600	1.90	1,253,200
Geese	120,200	1.22	146,600
Ducks	135,700	.75	101,800
Total			<u>\$6,637,200</u>
Production:	Quantity	Price per Unit	Value
Commercial Eggs	28,158,000	\$.15½	\$4,364,000
Hatching Eggs	288,500	.40	115,400
Poultry Meat	30,000,000	.16	3,750,000
Total			<u>\$8,229,400</u>
Exports:			
Commercial Eggs	3,200,000	\$.20	\$ 640,000
Hatching Eggs			
Poultry Meat	6,000,000	.16	960,000
Baby Chicks			
Total			<u>\$1,600,000</u>

POULTRY POPULATION AND VALUE, 1942

	Number	Price per Unit	Value
Hens and Chickens	8,630,000	\$.65	\$5,609,500
Turkeys	696,600	2.00	1,393,200
Geese	128,000	1.25	160,000
Ducks	154,000	.75	115,500
Total			<u>\$7,278,200</u>
Production:	Quantity	Price per Unit	Value
Commercial Eggs	35,600,000	\$.17½	\$6,230,000
Hatching Eggs	413,000	.40	165,200
Poultry Meat	32,000,000	.16	5,120,000
Total			<u>\$11,515,200</u>
Exports:			
Commercial Eggs	9,000,000	\$.22	\$1,980,000
Hatching Eggs			
Poultry Meat	8,000,000	.17	1,360,000
Baby Chicks			
Total			<u>\$3,340,000</u>

When the quotas for export were being considered, a figure that seemed to be about the limit would be arrived at when the British Ministry would ask for more eggs. This procedure divided the poultry interests in Canada into two groups, those who said that possibly 80,000 cases would be the limit and those who said that half a million could be had. The outcome was a commitment for 1,500,000 cases, and so close did Canada come to filling the contract, she actually delivered 1,251,198 cases, that all concerned in this venture can feel justly proud of the grand effort that was put forth.

Alberta can justly be proud of her part in the 1942 "Eggs for Britain" campaign, as she not only was the second province to fill the quota set, but filled the breach elsewhere. Our share of the export contract was set at 200,000 cases, or 6,000,000 dozens of eggs; when the year was up we had actually delivered to the Special Products Board 210,584 cases, but that wasn't the whole picture. The great industrial development at the West Coast not only created a greatly increased domestic demand, but resulted in the closing of many of British Columbia's small poultry plants, as their operators found more lucrative employment in the factories, shipyards, lumber camps, etc. Then the tremendous development of the North came along with a rush, and the demand from there was heavy. Besides giving Britain 10,584 cases more than she asked for, Alberta poultry producers supplied an estimated 100,000 cases to British Columbia and to the North, an accomplishment deemed utterly impossible one year ago.

Alberta excelled not only in the quantity of eggs supplied, but in the quality as well. Largely due to the very low price levels that prevailed for eggs during the spring and summer months, very little attention was paid to the birds or to the eggs by the majority of farmers. The usual run was about 25% eggs of Grade A and the balance B's, C's, and rots. The demand was for Grade A, and to encourage more eggs in this category the A eggs were bonused 3c per dozen. This helped considerably, but during June the percentage of B's and C's climbed altogether too high. The Poultry Branch got out a hanger pointing out the benefits of Grade A eggs, how to produce them, and how to maintain their quality. The wholesale dealers distributed about 35,000 of these in two weeks, and the improvement in egg quality was surprising. Certainly the producers did their full share in this effort.

Shortly after the production campaign got under way, an order came from Britain—"No more eggs in the shell." Shipping space was at a premium, and shell eggs took up too much space for their food value. This meant powdering the eggs, and we only had a few plants in Canada, enough to do less than half the job required. Before the additional drying equipment could be built the storage space was more than used up with thousands of cases still to be stored. This brought about a new innovation in the egg business. Moulds were built to hold the liquid of about one case of eggs. These were lined with heavy wax paper. The eggs were broken, melted, and poured into the moulds, frozen into solid blocks and then the blocks were piled in the freezers, the moulds being used over and over again. In this manner the storage space required for a case of eggs was reduced to about one-quarter of the original space required. As the new drying plants came into operation, these blocks were "shaved," liquified and powdered.

Two egg drying plans were erected in Alberta, one at Edmonton and the other at Calgary. Their combined drying capacity is 1,200 to 1,500 cases per day.

Hatchery Development.

Naturally the expected development for 1942 meant a heavy increased demand for day old chicks. Hatcheries increased their setting capacity by about 20%, and approximately 25,000 more birds were blood tested and passed for Hatchery Approval. The following table shows the hatchery development in Alberta since 1936:

Year	Number of Eggs Set	Number of Chicks Hatched	% Increase of Chicks Hatched Over Preceding Year
1936	1,821,689	979,789	
1937	2,076,591	1,047,866	6.9%
1938	2,113,672	1,164,757	11.1
1939	2,608,237	1,394,194	19.7
1940	2,760,672	1,538,597	13.5
1941	2,461,349	1,938,052	25.9
1942	4,956,405	2,631,468	35.7

The increase from 1936 to 1942 was 168.5%.

All American Turkey Exhibit.

With the Toronto Royal discontinued for the duration, the members of the Alberta Turkey Breeders' Association felt that they would like to have the experience of competing at the All American Turkey Show held annually at Grand Forks, North Dakota; not only did they wish to compare their stock with the best in America, but they wanted to explore the possibilities of the American markets. Although only about two weeks' time was allowed to get the exhibit together, they sent 13 birds (11 Bronze and 2 White Hollands), and their showing was very creditable indeed. Many prizes were taken and many valuable pointers were gained, and we can feel justly proud of the quality of our Alberta turkey breeding stock.

The Alberta Poultry Producers' Marketing Board.

Following the producer mandate given during the vote of 1940, the setting up of a producer-controlled marketing organization got under way late in 1941 at Edmonton. During 1942, many feeder branches were opened. Through the efforts of this organization the wholesale spread was reduced about one-third, and the Board itself distributed about \$100,000.00 in cash dividends and participation certificates. Due to the activities of the Board other wholesale establishments paid similar cash bonuses sold on the pool basis, and did everything possible to match the Board's activities outside of issuing participation certificates. The Poultry Producers' Marketing Board has become a real factor in the poultry markets of Alberta.

Provincial Poultry Plant.

In the 1941 report it was stated that the Provincial Poultry Plant at Oliver was rapidly rounding into shape, so that the benefit of the breeding work being done could be passed on to the Approved Flock owners on a larger scale. After careful consideration of the work being done and the records being kept, the Dominion Government granted full recognition for the plant breeding records, a concession not heretofore granted to any others except for their official R.O.P. records. We appreciate this courtesy, and thank the officials who made it possible. In the future all birds at the plant that will be

trap nested will be entered in R.O.P. and all cockerels sold to the Approved Flock owners will have official records behind them, thus entitling the flocks headed by these males to use the term "R.O.P. Sired" when selling their hatching eggs or chicks. This year we sold approximately 500 pedigreed cockerel chicks and 200 mature male birds to Alberta Approved Flock owners. The official recognition of our records will enable us to distribute annually approximately 1,500 R.O.P. wing banded cockerel chicks and 300 mature R.O.P. cockerels. The benefit to be derived from these birds by the purchasers of Alberta approved chicks from our commercial hatcheries cannot be computed in dollars and cents with any reasonable degree of accuracy, but the amount will be very considerable.

This year, 492 pullets were entered in R.O.P.

The plant supplied pullets to the Provincial Training School at Red Deer, in addition to the usual requirements of the Olds School of Agriculture.

Previous reports have pointed out that the percentage hatchability of Alberta eggs is too low, and that possibly some of this is due to lack of riboflavin (Vitamin G) in the feed. This vitamin is particularly scarce because of the small amount of milk powder available for poultry concentrates. In co-operation with the Poultry Department, University of Alberta, a breeders' feeding experiment was carried on at the plant, in which it was shown that this vitamin can be supplied efficiently and economically in the artificial or pure form. (This experiment is being repeated at the present time.) The results of this experiment were published in the "Canadian Poultry Review" and the "Egg and Poultry Magazine" of the U.S.

Curled Toe Paralysis also was showing up in the growing stock through the Province, and as this trouble is also caused by the lack of riboflavin or Vitamin G, another series of experiments was carried on at the plant. In these, it was also shown that the pure form of the vitamin could be used economically and efficiently. This work will be continued further in 1943 and the results published.

Alberta Poultry Federation.

The Alberta Poultry Federation was reorganized during 1942. The need for all inclusive poultry groups became very evident with the necessary co-ordination of views and information if the greatly increased production campaign was to be a success. In Nova Scotia they had a Poultry Council and in Saskatchewan they had the Poultry Board. We had the Poultry Federation. These groups were reorganized, and in the other provinces Poultry Industry Committees were organized. The work of all these groups has been fairly well co-ordinated, and a considerable interchange of ideas and information takes place. This year the Alberta section of the Canadian Produce Association and the Alberta Hatchery Approval Association became affiliated. It is expected that Alberta will soon have a Feed Manufacturers' Association, and that they as well will affiliate.

As too high a percentage of Alberta's poultry were arriving in poor condition and poorly dressed at the receiving stations, Leaflet No. 61, "Poultry Prepared on the Farm for Marketing," was published, and about 25,000 copies distributed with the assistance of the

wholesalers. The Poultry Federation paid for 20,000 of these leaflets.

Two members of the Poultry Branch staff have joined the active forces—Miss M. D. Stack the R.C.A.F. (Women's Division), and Mr. H. N. Woodsworth the R.C.A.F. as Loftman in the Pigeon Section.

Poultry Act.

If ever there was a time to give full recognition to the poultry industry as a distinct phase of agriculture, now is that time. Poultry is no more an adjunct of the live stock industry than is the dairy industry, and yet the latter has had full recognition under its own act as a distinct phase of agriculture, the Dairy Act and regulations thereunder being drawn up to take care of the requirements of that particular industry. Poultry has just as many ramifications as has any other phase of agriculture, and should have an Act of its own drawn up to take care of the necessities of this rapidly expanding industry. A study of this poultry marketing situation above leaves no doubt as to the need of definite regulations and co-ordination which can only be accomplished with the greatest degree of efficiency by having a Poultry Act.

REPORT OF DIRECTOR, AGRICULTURAL EXTENSION SERVICE

(R. M. PUTNAM)

The Extension Service of the Department of Agriculture was called upon to perform a multitude of duties during 1942, as the tempo of war production created new and pressing problems. The services performed by this branch were maintained, and in several instances increased. Several additional duties were allotted to the Extension Branch during the year.

Direction of the District Agriculturists was made a responsibility of the Extension Service on January 1st, 1942, and in September the branch assumed the work of organizing a Farm Labour Service under an agreement made between the Department of Labour at Ottawa and the Alberta Department of Agriculture. The setting up of a Consultive Committee on Agricultural Services brought additional responsibility to the branch, in as much as the Director was named Secretary of the Committee. With the beginning of the radio season early in November, a new programme, known as "The Alberta Farm and Home Forum," was undertaken as a joint project with the Department of Extension of the University of Alberta. Greater demands for bulletins, meetings and other extension services made 1942 the busiest year in the history of this branch.

The Extension Service has maintained its policy of co-operating with other organizations in effecting the distribution and utilization of agricultural information. The work of the branch is, however, restricted by the fact that there is not in this Province a channel through which the services offered by the Department may most effectively reach the rural public. Some method of utilizing existing farmer organizations in this programme is badly needed, and it is hoped that the efforts of the Consultive Committee may yield some results in this field.

More valuable work could be done by the Extension Service if additional staff was available. The shortage of farm labour this year, the lack of equipment and the tremendous crop, created a pressing demand for labour-saving devices. This demand was only partially met because of a lack of staff to cope with the problems.

Once again the Extension Service desires to express its appreciation to all those who have rendered assistance during the year. The members of the staff of the Faculty of Agriculture at the University were most generous in the help they provided at Short Courses, Field Days and agricultural meetings. The policy of utilizing the members of this Faculty as specialists is proving quite satisfactory. Much valuable assistance was also given by officers of the various services of the Dominion Department of Agriculture. The very best co-operation has also been given by the other branches of the Department. A word of thanks is also expressed to the many organizations and individuals who have in various ways contributed to the extension work as carried on by the Department. Finally, mention must be made of the contribution of the Press in the distribution of agricultural information by carrying in their columns the material contained in the Agricultural Notes.

One function of the Extension Service which has not yet been developed to its maximum is that of assisting and providing information to institutions and organizations which have a responsibility to their members and to the public at large by reason of their position in provincial affairs. It is hoped that the Extension Service may be able to meet this need to a greater extent in the years to come.

The staff of the Extension Service was augmented this year by the appointment of M. K. Fraser, B.Sc. in Household Economics, to supervise Girls' Clubs and assist with the regular programme of the Women's Division. Changes in staff in the District Agriculturist Service will be found in that section.

Extension Fieldmen.

Mr. F. F. Parkinson, of the Olds School of Agriculture, was again transferred to the Extension Service for the summer months to conduct a series of Farm Machinery Field Days and to otherwise deal with agricultural engineering problems. At these Field Days stress was placed upon the importance of maintaining and repairing farm machinery because of the anticipated shortage of both new machines and repair parts. In the south of the Province the blade-weeder created the most interest, while in the sugar beet areas the Segment-Seeder drew greater attention. The tiller was most discussed in the central part of the Province. In the small farm areas north of Edmonton, it was found that in many cases the combination of tractor and tiller was unsuitable, the tiller being too small for efficient operation of the tractor.

The lack of farm labour focussed attention on labour-saving devices. When harvest began a great deal of interest was shown in stook sweeps and other similar home-made labour savers. Unfortunately, time and staff did not permit much assistance being given with this problem, although many requests were received.

In the later summer of 1942 farm machinery was rationed. Under the regulations the purchaser was obliged to produce evidence that he required new equipment. Production of new machines was limited to 25% of that of 1940, and repairs were manufactured to the extent of 150% of the 1940 output. Many lines of non-essential machinery were discontinued altogether, and the number of models and sizes of various equipment was reduced to a minimum.

Members of the staff of the Department were invited to several meetings of the Wholesale Implement Dealers' Association, where they were privileged to take part in the discussions pertaining to the rationing of farm machinery.

During October, Mr. Parkinson was asked to make a survey of stook sweeps in order that plans and diagrams might be prepared for 1943.

The total number of farm machinery field days held was 49, at which the total attendance was 2,807, or 57 as an average. In most cases the field days were organized by the District Agriculturists.

The need for providing farmers with assistance in making labour-saving devices, especially haying and harvesting equipment, and of encouraging them to conserve their present equipment, is the most pressing problem for next year.

Publications and Statistics.

One measure of the service being rendered by the Extension Branch is indicated in the distribution of publications. During the year it is estimated that about 285,000 bulletins, circulars, leaflets, special leaflets and plans were distributed. Of this number, 144,000 were special leaflets dealing with Equine Encephalomyelitis, Hemorrhagic Septicemia, Production of Special Grade Cream, Egg Production and Poultry Problems. While distribution of these bulletins is largely on a request basis, the special leaflets were distributed through various agencies, viz.: grain elevators, dairy factories, live stock associations, farmers' organizations, and other channels.

Listed herewith are the new publications printed during the year. Reprints of a number of publications were also made:

Leaflet No. 56—Brooding and Rearing Chicks and Poults.

Bulletin No. 57—The Salad Bowl.

Bulletin No. 58—Wintering Bees in Alberta.

Bulletin No. 59—The Weed Problem in Alberta.

Circular No. 60—Spotlights on the School Lunch.

Leaflet No. 61—Poultry Prepared on the Farm for Marketing.

Joint Series No. 2—Budding and Grafting.

Special Leaflets:

Equine Encephalomyelitis.

Summer Eggs Pay If Grade A.

Hemorrhagic Septicemia.

Poultry Marketing.

Special Grade Cream.

Honey Helpings.

Canning and Preserving with Honey.

The Annual Report of the Department was issued and distributed to a selected mailing list.

The Junior Farm Club Bulletin was published quarterly in the interests of the Junior Clubs of the Province. About 3,500 Junior Club members receive this bulletin.

The Department of Agriculture Notes were issued weekly and mailed to approximately 200 newspapers and agriculturists. The Agricultural Notes contain timely information on various phases of agriculture. They are prepared especially for the Press, which has shown a fine spirit of co-operation in carrying the Notes for the benefit of their farm readers.

The crop reporting system was revised during the year by the addition of about 200 more reporters, bringing the total to 250. Ten crop reports were issued during the crop season. The appreciation of the Extension Service is expressed to the crop reporters who so faithfully submitted their reports, and without whose assistance such a service could not operate.

The Joint Publications Committee, which represents the Department of Agriculture and the University of Alberta, published one bulletin during the year, "Budding and Grafting."

In addition to these publications and periodical reports, about 120,000 mimeographed copies of special subjects were issued and distributed. Among these were about 16,000 lessons in Home Economics for the Correspondence Courses and 19 mimeographed sets of 39,000 copies, containing information for homemakers.

The total number of letters received asking for various information was estimated to be about 5,500.

The arrangement with the Dominion Bureau of Statistics was continued. The Department prepared several statistical reports

during the year, including "Gross Production for 1941," "The Autumn Survey," and a number of special releases were issued. Because of the importance of the agricultural industry in the war effort, the public at large is displaying much greater interest in production figures and similar information.

There is still, however, a dearth of agricultural statistics. Accurate information on a municipal basis is urgently needed in order that the demands being made upon agriculture may be equitably apportioned for fulfilment.

RADIO

Agriculture has not made as effective use of the radio as it might have. It is a powerful means of reaching farmers to discuss their problems with them and to provide them with technical information relating to their operating practices. Since about 70% of the farm homes have radios, it can be utilized with great effect.

Much is still to be learned in the actual technique of broadcasting agricultural information, and the efforts of the Department in the use of radio are not as effective as they might be, because of the lack of staff to properly study, prepare and release more appealing broadcasts.

There follows in this report details of the programmes in which the Department is participating.

Radio as a means of reaching the rural public is recognized by the Department, and is being utilized to a greater extent each year. During 1942 the Department participated in radio in four different fields.

1.—*Farm Radio Forum.*

Farm Radio Forum is a national broadcast sponsored by the Canadian Broadcasting Corporation, the Canadian Federation of Agriculture and the Association of Adult Education. It is a listening groups' programme which depends on Provincial Committees to organize and supervise listening groups within each Province. The Department of Agriculture is represented on the Alberta Provincial Committee, and has supported the organization of listening groups in a financial way as well. Farm Radio Forum is now in its second season in Alberta. The programmes deal with current national problems of special concern to rural people.

2.—*Alberta Farm and Home Forum.*

The Alberta Farm and Home Forum is a new programme which began on November 9th, 1942, as a joint effort sponsored by the Department of Agriculture and the University of Alberta Extension Department. It replaced the University Farm Forum, and consists of a ten-minute talk on an agricultural subject followed by a five-minute news commentary. The broadcasts are given at 9:00 p.m. each Monday, Wednesday and Friday evening over CKUA Edmonton and CFCN Calgary. Although this programme has been released for only two months, there is some evidence that it is being well received.

During the year, officials of this Department delivered 18 talks on the University Farm Forum and six on the Alberta Farm and Home Forum, or a total of 24 talks.

3.—*Junior Farm Forum.*

The Junior Farm Forum is conducted by the Department for the Junior Clubs. During the spring series a half-hour broadcast was given from 11:30 to 12:00 each Saturday morning, but when the programme began in the fall the period was reduced to 15 minutes. In 1942, 27 Junior Farm Forum broadcasts were given.

4.—*Miscellaneous.*

The fourth use made of the radio by the Department is the broadcasting of special messages, spot announcements and advertisements. During the year, 15-minute talks were given on Equine Encephalomyelitis, Hemorrhagic Septicemia and The Farm Labour Situation. A number of spot announcements were released.

VISUAL INSTRUCTION

The visual instruction equipment continues to be popular with department officials in their extension activities. It is in demand at Short Courses, Field Days, Meetings, Schools of Agriculture, and other events.

Unfortunately, lack of time and staff have prevented the Extension Service from preparing much needed equipment dealing with Alberta conditions. One film strip on judging beef calves was made during the year and a few reels of movie film were secured.

From studies made in the United States, the 2 by 2 Kodachrome slide is becoming recognized as the most effective type of still pictures. Movies, both sound and silent, are useful as a supplementary aid, but should not be depended upon too much because they are still accepted as entertainment rather than education.

No new equipment was obtained during the year.

AGRICULTURAL FAIRS

A further reduction in the number of fairs took place in 1942. The total number of Class "A," "B" and "C" fairs held in 1942 was 15, compared to 18 in 1941.

The class "A" fairs at Calgary and Edmonton were held. The Calgary fair enjoyed a satisfactory run, but the Edmonton fair was inferior to its usual high standard, since it was held under greatly restricted conditions. The R.C.A.F. has occupied the Edmonton Exhibition Association Buildings since 1941, so the fair was held in Borden Park and the live stock were housed in a few barns not being used by the air force.

The class "B" fairs at Lloydminster, Red Deer, Vegreville and Vermilion were conducted as usual. Attendance was exceptionally good at these fairs, although the total number of exhibits was slightly down from 1941.

Nine class "C" fairs were held at Benalto, Didsbury, Falher, Lacombe, Lousana, Olds, Priddis, St. Paul and Wildwood. At these fairs the number of entries were generally below that of 1941, although attendance was considerably improved.

Assistance to the fairs was continued on the same basis as in 1941. The Edmonton and Calgary Exhibition Associations received special grants. The class "B" fairs were given special grants, while the class "C" fairs were assisted on a percentage basis, the Department grant being based on the actual prizes paid. The class "B" and "C" fairs also received special grants to assist with live stock classes.

A number of agricultural societies are attempting to carry on other activities, and some of them have utilized their buildings for grain storage or other wartime needs.

There was considerable controversy during the year over the question of fairs operating under wartime conditions, but in a survey made in December, most of the societies indicated their desire to carry on.

If fairs are to be held in 1943, then it is most desirable that their programmes be closely checked and revised where necessary, to eliminate non-essential features and lay emphasis on those items which are of definite value in the war effort.

Agricultural societies must recognize the very important part they should play in advancing the agriculture in their districts by means other than the fair. So long as their efforts are limited to one endeavour, they will be subject to the possibility of having the whole programme wiped out by conditions beyond their control. A more extensive programme would allow them to continue, even though part of their activities were obliged to cease.

Consultive Committee on Agricultural Services.

In July, 1942, a Consultive Committee on Agricultural Services was appointed by the Minister of Agriculture. The members of this committee represented the Department of Agriculture, the Department of Lands and Mines, the University of Alberta, the Municipal Districts of Alberta, the farmer organizations and the farm women's organizations.

The purpose of the committee is largely of a consultive character, the Department of Agriculture consulting the committee respecting the various policies and services it offers to the public. One function of the committee will be to advise the Department respecting the problem of distributing agricultural information to the farmers, and conversely to suggest a method by which the consensus of farmer thinking may be readily transmitted to Department officials. Advice on policies and programmes to be carried on by the Department will be solicited from the committee.

The committee will also be responsible for advising the Minister of Agriculture on matters pertaining to Agricultural Reconstruction.

The first meeting of the committee took place on August 28th, 1942, when its duties and functions were discussed. Other meetings are being planned.

Farm Labour Service.

Early in the summer of 1942 the farm labour problem became one of some concern. The departure of young men for the forces, to essential industries and to other jobs, depleted the supply of labour. Many young women also left the farm. This depletion of the labour force, together with restrictions on the sale of new farm machinery, the prospect of a huge crop and the general need for more labour to meet the requirements of the expanding live stock industry, indicated a serious situation was approaching. During July and August conferences were called by the Unemployment Insurance Commission, at which representatives of the Department of Agriculture, farmers' organizations, the Municipal Association and other organizations were present. Plans were made under which the municipal secretaries would act as local contact men,

and farmers were advised to place their orders for help through the municipal district secretaries.

The District Agriculturists were enlisted in this plan to co-ordinate the efforts of the municipal district secretaries within each territory and to generally supervise the programme.

In September, a Farm Labour Agreement was signed by the Department of Agriculture and the Dominion Department of Labour. This Dominion-Provincial agreement was a joint arrangement under which the Unemployment Insurance Commission and the Alberta Department of Agriculture would work out plans for recruiting, distributing and transporting farm labour. Funds were provided on a fifty-fifty basis, and certain regulations were contained in the agreement respecting expenditures, etc.

Following the signing of the agreement, the Department set up a farm labour service under the Agricultural Extension Branch. Eleven farm labour supervisors were appointed, who were located in certain offices of the District Agriculturists where the labour problem seemed most acute, or where a surplus of labour was likely to be found. The supervisors commenced immediately to give assistance in the harvest by allotting available men to farms, organizing the town people, and encouraging more co-operation in the use of equipment.

About October 7th it was announced that 5,000 harvesters from Eastern Canada were being recruited to assist Saskatchewan farmers, and a few days later arrangements were made to bring some of them who were not needed in Saskatchewan, into Alberta.

Between October 15th and 18th, about 2,000 Eastern harvesters arrived in Calgary and Edmonton, from which points they were immediately distributed to areas where they were needed most. Local distribution was directed by the farm labour supervisors and District Agriculturists.

Close contact was maintained throughout this period between the Department and the Unemployment Insurance Commission, and no particular difficulties were encountered.

Although the arrival of the 2,000 harvesters was of considerable assistance to the farmers, the fact that they reached the Province three weeks too late greatly reduced their utility. Local snow on October 22nd and a general storm on October 26th, which terminated threshing in some districts, further diminished their usefulness. Perhaps 15% of the student harvesters were too young and inexperienced for the work.

About the middle of November the Employment and National Selective Service (formerly Unemployment Insurance Commission) began a search for men for the mines and lumber camps, and appealed to farmers and farm labourers who could be spared from the farms to take jobs in these industries. A meeting was held with representatives of the lumbering industry, and the farm labour supervisors were requested to recruit men, who could be spared from farms, for jobs in camps and mines. From that date until the end of the year the supervisors were occupied in this work.

Many problems face the farmer in respect to labour. Farm wages are not high enough to retain men on the farm in competition with wages offered elsewhere, and the freezing order of March 23rd, 1942, has not appeared to have been wholly effective in keeping men in agriculture. Enlistments and military call-up have likewise re-

moved many men from the farm. Whether production of essential agricultural products can be maintained or increased to meet the new demands is questionable. The farm labour supervisors of the Department began a survey of farm labour needs about December 1st and expect to have more specific information early in the new year. Meantime, the labour situation continues to be the major problem facing the farmer.

WOMEN'S EXTENSION PROGRAMME

The demand for extension work for women and girls as conducted by the Department of Agriculture is rapidly increasing as a result of wider acceptance of this service and the need of home-makers for timely and authentic information in meeting the many problems arising from war conditions.

The lack of sufficient assistance and funds to meet this growing demand is one of the main problems with which this work is faced. Without some addition to the staff, even the system of leader training to reach more people cannot be undertaken to any extent. This system has been found very satisfactory in other provinces which carry on similar work with a small staff. It is hoped that funds for a larger staff will be made available in order to place district home economists to work within a specified area. This would permit definite projects such as "the improvement of the nutritional status of rural people" or "adequate school lunches" to be undertaken where most needed. As a result of a greater consciousness of the need for more information about foods and nutrition, there is a demand from organizations for trained leadership in this field.

The Supervisor of Women's Work is a member of the executive of the Provincial Nutrition Council and the Edmonton and District Nutrition Council. The Provincial Nutrition Committee co-operates with Nutrition Services at Ottawa under the Department of Pensions and National Health. It is expected that the Women's Extension Branch will co-operate with this committee and the Department of Health in organizing local nutrition councils throughout the Province and assisting them with their local nutrition problems and study groups.

A summary of the activities of this work for the year may be divided as follows; demonstrations, correspondence courses, girls' clubs, publications and miscellaneous. A brief review of each is given herewith:

Demonstrations.

In 1942, 268 demonstrations were held with an attendance of 8,272 women, or an average attendance of 31. In 1941, 242 demonstrations were held with an attendance of 6,292, or an average of 26 women. The lectures and demonstrations were given on topics of timely and vital interest to rural women, being planned to assist the home maker in the many new problems with which she is faced and to encourage her in practices which may further the war effort. Of the five demonstrators, three were Home Economics teachers from the Olds School of Agriculture and available for this work only during part of the summer months, having to return from the field for special summer courses held at the School of Agriculture.

Correspondence Courses.

The following winter study courses are offered women's organizations: Foods, Nutrition and Health; Rug Making; New Furnishings for Old; and Consumer Problems in Wartime—the latter being a new course prepared this year. In all, 264 groups composed of 4,318 women are taking one of these courses. The fact that more groups have applied for these courses than last year despite the fact that many of these groups are busy with war work, indicates a growing interest in the value of these courses.

Owing to the limited staff last year, it was not possible to assist leaders of these study groups other than by correspondence.

Girls' Work.

Instruction in various phases of Home Economics is being given to girls in Alberta by means of the Girls' Club programme. It has been found that this programme is filling a very definite need among these 'teen age girls, especially in rural areas whereas it is the only source of this type of instruction.

There are now eight garden clubs, five centred at Brooks and three in the vicinity of Olds. These are sponsored in co-operation with the Alberta Wheat Pool, who have given their whole hearted support to this work. They are willing to continue co-operation in keeping the present clubs active, but do not feel justified in expanding the work into other districts due to wartime conditions.

Lesson material is available to any others Girls' Clubs interested in carrying on this type of programme. The largest group of these is the Women's Institute Girls' Clubs, 31 of which are active in this Province at the present time. A Women's Institute Girls' Club Convention was held at the Olds School of Agriculture in the summer, with a representative from the Department attending.

Besides these clubs, 60 other clubs in the Province with an average membership of 19 were given assistance in organization; had study material provided and received supervision of their work from the Department as far as was possible.

The project material offered to the clubs, consists of lessons in Good Grooming, Sewing (1st and 2nd year), Home Decoration, and Home Management, with some encouragement given to handicraft work, first aid, etc.

Girls' Club work would be greatly benefited if prizes or awards were offered to the girls on the completion of their year's work. This would give them some goal to work toward, and should serve as a means of encouraging them to improve themselves.

The need of trained leaders in districts where clubs are located is great, but lack of funds hinders the bringing of these leaders together at central points for leadership courses which would provide some training. Since Fall one member of the staff has been visiting the clubs as regularly as possible to supervise their work. This helps to keep the clubs co-ordinated and active, but the work would go ahead much faster and better if the local leaders could receive instruction and training.

Publications.

Two new bulletins, "The Salad Bowl" and "Spotlights on the School Lunch," were published, and two special leaflets, "Honey Helpings" and "Canning and Preserving with Honey." Besides these, 19 sets of mimeographed leaflets were prepared for use in

answering the many enquiries for information and for demonstrations. Several other leaflets were revised in order that the information be up to date. In 1942, 26,850 publications were distributed by this branch and 1,700 letters requesting information answered.

Miscellaneous.

In 1942, a lady speaker was provided at 28 field days to speak to the women on some timely Home Economics subject.

Special short courses were given in June and July to women attending Farm and Home Week and Farm Women's Week as well as the C.S.T.A. Convention. Demonstrations were also supplied from this branch for the two Schools of Adult Education.

Instruction is given to women at fairs and conferences or conventions of various organizations.

For the coming year this branch plans to develop its work along lines which will assist home makers in meeting the immediate problems brought about by war conditions, and as far as possible encourage practices which will help the war effort.

SHORT COURSES, FIELD DAYS AND AGRICULTURAL MEETINGS

Despite the restrictions on travel and the lack of labour which prevents farmers getting away from home readily, the demand for agricultural meetings was quite good during the year. There was a tendency to restrict large meetings, but the total number of gatherings was almost as large as the previous year.

The meeting is a popular form of extension work. Farmers enjoy getting together to discuss their problems, and the good obtained is not wholly in the information given by the speakers, but also in the ideas and opinions expressed by the farmers themselves. The ultimate value of such programmes is, however, the extent to which the farmers apply the information obtained, and it has been shown in United States studies that the meeting is quite effective as the incentive to improve farming practices.

In so far as possible, the policy of the Extension Branch is to encourage local organizations to sponsor meetings as part of their activities. Hence, we have boards of trade, agricultural societies, farmer organizations, and other groups co-operating with the Department in the arranging of meetings. Local groups have a responsibility to their members which may be partially expressed through activities of this kind.

Since nearly all meetings are organized through a District Agriculturist, the reader is referred to that section of this report for further details. However, mention should be made of several special events.

The Calgary Short Course, sponsored by the Department and the Calgary Board of Trade, was held in January with an attendance of about 600. The popularity of this gathering seems to increase from year to year.

In June, Farm and Home Week was held at the Olds School of Agriculture with a total attendance of about 750 men and women. Inclement weather curtailed attendance. Farm and Home Week is an event especially planned for farmers and their wives. It is both educational and recreational.

Mention should also be made of a plan used in January and February whereby specialists in swine, dairy cattle and poultry

were sent in rotation to visit each District Agriculturist. During the three days when each specialist was in the territory of the District Agriculturist, meetings were arranged or the services of the specialists were otherwise employed. The results of this plan were considered to be quite satisfactory. The specialists addressed 99 meetings.

This branch provided assistance at 22 Field Days organized by the Supervisors of Illustration Stations at Lethbridge and Lacombe.

A number of Field Days were also arranged by the Crop Testing Plan and by the North West Line Elevators Association, Agricultural Department.

Instruction at Field Days, Short Courses and meetings is provided by members of the staff of the Department, members of the staff of the Faculty of Agriculture and other authorities.

DISTRICT AGRICULTURISTS

The services performed by the District Agriculturists have become of greater importance since the war began. The demands made upon agriculture by the nation at war have created many new problems which the District Agriculturists have assisted in solving. The requirements of the United Nations for live stock products necessitated a change on many farms from a grain economy to one in which live stock predominated. This change in itself raised many new problems, and as farmers put the pressure on their live stock and equipment to increase production they created other problems which the District Agriculturist has been called upon to solve. The farm labour situation in the past year became so acute that District Agriculturists were called upon to assist in utilizing the available manpower to the best advantage.

The District Agriculturist Service has experienced a number of difficulties this year. Several staff changes were made necessary through enlistments, resignations and transfers to other positions. One new office was opened and two temporary offices were made permanent. The following changes and appointments were made in the staff during the year: T. Kilduff was appointed District Agriculturist at Thorsby, February 9th, 1942; O. G. Bratvold was appointed District Agriculturist at Berwyn on a full-time basis; G. G. Goldberk was transferred from Red Deer to Athabasca on May 15th—on August 24th he was granted leave to join the R.C.A.F.; J. E. Price, who took over the Red Deer office on May 15th, applied for leave of absence on August 15th to join the Royal Canadian Navy; W. R. Hanson, of Cardston, was employed to occupy the Red Deer office on a temporary basis on August 17th; D. A. Andrew resigned as District Agriculturist at Vermilion on September 23rd to become Secretary of the Canadian Hereford Breeders' Association; E. H. Buckingham, formerly of the Field Crops Branch, returned to the Department upon his release from the armed forces, and took over the Vermilion office as District Agriculturist; J. E. Birdsall was appointed a District Agriculturist with headquarters at Red Deer on November 17th, and Mr. Hanson was transferred to Stettler to relieve A. J. Charnetski, who was brought to Edmonton to assist with the Farm Labour Service; G. L. Godel, of Melfort, Sask., was appointed District Agriculturist at Athabasca on November 13th, which became a permanent office; T. W. Townley-Smith, of Scott, Sask., joined the Department on November 16th to open a new District Agriculturist office at Hughenden; N. N. Bentley

transferred from the District Agriculturist Service to the Field Crops Branch on November 15th; F. N. Miller, of Edmonton, was appointed as District Agriculturist to succeed Mr. Bentley in the Edmonton-Edson territory, his appointment to become effective January 1st.

Additional staff problems were those pertaining to transportation, viz., cars, tires and gasoline rationing.

In spite of these difficulties, the District Agriculturists carried on their services, and while they could not do as much travelling, they made up for this by distributing more bulletins and meeting more farmers in their offices.

While the opening of one new District Agriculturist office and making two temporary points into permanent offices is of great assistance in serving the Province, the size of the districts and the number of farmers residing in each territory limits the effectiveness of the service. Districts of not more than 2,500 farms for each District Agriculturist would appear to be a reasonable criterion.

The following summary will indicate the services rendered by the District Agriculturists in 1942; 1941 figures are given for comparison:

	1941	1942
Number of offices	18	19
Permanent	15	18
Temporary	3	1
Number of meetings held	972	958
Total attendance	47,758	48,069
Average attendance	49	50
Number of farms visited	11,262	11,923
Number of office interviews	9,152	10,430
Number of letters written	16,055	15,672
Number of bulletins distributed	26,777	37,790
Number of telephone calls		10,051

Reports submitted by each office follow.

Athabasca (G. L. Godel).

The Athabasca district is a very large one, but since there is much unoccupied land, the district consists chiefly of a series of settlements along two main roads. The first of these roads is that from Clyde to Smith through Athabasca, and the second from Colinton to Wandering River, through Boyle, Donatville and Plamondon.

A beneficial change is taking place on many farms from wheat growing to the growing of a substantial acreage of coarse grains. Much of the coarse grain is being fed to live stock, and although there is still room for improvement, the trend is quite noticeable.

The value of sweet clover as a soil builder has been recognized for some time by the more progressive farmers, but in view of the fact that alfalfa does well in the district and is a much more desirable legume, there seems to be little justification for continuing the growth of sweet clover. Many farmers in the district did quite well in 1942 from the sale of sweet clover seed. Fourteen cars of sweet clover and three cars of alfalfa were shipped in that year from Athabasca, which is the clearing house for most of the seed. The seed purchased generally in the district was commercial seed, and it would be most desirable if, for new seedlings of alfalfa on non-contaminated soil, registered seed were used in future.

Production of hogs increased about 25% in the district during 1942, but the increase in cattle was slight.

The poultry industry has progressed favourably. Before Christmas, nine cars of dressed poultry of good quality were shipped to the West Coast. The Athabasca egg candling station handled 4,000 cases of eggs in 1942 as compared with 1,000 cases in 1941.

There is now considerable interest in beekeeping in some parts of the district, centring particularly around Athabasca and Colinton.

Fertilizer demonstrations were carried out under the auspices of the C.N.R. Colonization Department at Richmond Park, Colinton and Boyle.

Berwyn (O. G. Bratvold).

A definite trend towards more live stock is apparent, with greatest interest shown in cattle and hogs.

There was little rain during the growing season and a light crop resulted. Wheat averaged from 25 to 35 bushels to the acre. Oats and barley were seriously damaged by frost in scattered areas. Although little moisture fell during the growing season, there was no feed shortage and feed was of good quality.

Winter wheat is becoming increasingly popular, about 50% of all wheat grown being winter wheat. The variety Kharkov is used with success. Yield and grade compare favourably with spring wheat. Very little registered or certified seed is grown. It would seem possible to induce much improvement in this line, particularly in view of the fact that three good seed cleaning plants are operating in the district. Newal is becoming the popular barley variety, and many enquiries for seed were received. Brome is grown in quantity, particularly in the Fairview district, but little interest is shown in the growing of legumes. Much benefit would be derived from an increase in the acreage of legume crops.

Condition of live stock through the district was good, and feed supplies were adequate and of good quality. Horses in the area are of fair quality, but numbers are decreasing slightly. Cattle are good, with an increased production indicated. Interest in cattle is keen. Fifteen bulls were placed under the Bull Exchange Policy, and assistance was given towards the placement of six additional bulls other than under the policy. Fourteen boars and six sows were also placed, and local breeders who have good quality herds have been encouraged to register the litters. Few rams were placed, but under the Dominion policy 160 ewes were distributed.

A great deal of interest is shown in beekeeping. Production was higher than in 1941, due to a dry summer with plenty of sunshine and warm weather. Fireweed is abundant in this area, and provides an excellent source of nectar.

Extension work during the season was well received, and included meetings, fairs, field days, visits to farms, office interviews and the distribution of bulletins.

Brooks (M. L. Freng).

The crop season of the year 1942 started with very little reserve moisture owing to the mild winter and light snowfall. The excellent rainfall during the season resulted in a very good stand of grain, and the crops were uniformly good throughout the district. Due to the labour shortage, however, there were a few fields left unthreshed at the end of the crop season.

The work of this office continued along lines similar to other years. There was a good increase in club activities. We had two beef calf clubs, two wheat clubs, five girls' garden clubs, and last Fall a dairy club was organized in the Rainier-Scandia district. There was some difficulty, however, in procuring proper type and breeding in the animals to supply the thirty members in this club.

There were about 36 plots of soybeans scattered throughout the district. Here, however, there was some disappointment, as the season was quite backwards for this crop, and it can be judged as being successful by the results of this year's experiment.

I must commend the community spirit of the local business men and merchants of the district points, who, due to the labour shortage during the harvest season, organized into crews and assisted farmers with their harvesting. It is gratifying to see such spirit in the district.

Calgary (B. J. Whitbread).

Live stock raising is still on the increase in this district, and there is every indication that this will continue. The quotas on grain are having an effect, and some of the most ardent grain growers are losing their reluctance towards the raising of stock. These men are anxious to avoid losses through lack of familiarity with live stock raising methods, and are using every source of information available. Departmental publications dealing with live stock problems were greatly in demand, and numerous publications were distributed throughout the year.

Some cases of blackleg were reported where vaccination had not been a general practice. Hogs were generally free from intestinal troubles, and the campaign on the preventative methods of feeding sponsored by the Dominion and Provincial Departments of Agriculture during the past two years has produced satisfactory results.

Junior activities have been maintained. Grain clubs were reduced somewhat, but live stock clubs increased. At widely separated points, junior clubs carried on some crop improvement. Many districts not now able to secure improved seed from club members are realizing the value to the district of these junior seed growers. Boys of the most desirable ages for grain clubs are either in the armed forces or are too busy at general farm work to carry on with grain plots. The live stock clubs have proved very popular, and adult interest in these activities is a great aid to their success.

There is little change in the forage crop situation. Farmers with patches of alfalfa, realize their value for live stock feeding, but there are still too few who are inclined to seed any sizable acreage of permanent pasture. Forage crop seed growers are keeping up their production consistent with demand and as far as the availability of labour allows.

Camrose (J. L. Kerns).

Although the early part of the season was very dry, heavy rains during June and July produced a rapid and abnormal growth. The haying season was wet, and the large amount of hay harvested was of poor quality. The killing frost on May 18th to 20th caught a lot of the early barley and oats, and some reseedling was required. The heavy Fall moisture held up threshing, and the early snow caught approximately 60% of the grain in the stooks. Several

thousand acres of flax, oats and some barley and wheat were not cut. These crops are to be combined in the spring.

Junior club programmes were maintained. Seven grain clubs, one dairy club, one swine club and one beef club were supervised. Articles were prepared for local papers. Harvesting help was placed and machinery and labour surveys undertaken. Harvesting short-cuts were studied and pictures taken of various headers, barges and tractor sweeps.

Brome, crested wheat, sweet clover and alfalfa are the chief forage crops grown, with a little timothy and some millet. No alsike or Altaswede is raised. Some Fall rye and a great deal of oat green feed were grown. Due to the increase of live stock, far more brome and alfalfa are needed and will be sown. Forage crop seed associations are non-existent, but the municipalities of Lloyd George, Cornhill and Beaver Lake are carrying on this work. Seed setting of alfalfa in 1942 was poor.

In the district surrounding Camrose a very decided interest in better pigs and increased numbers is evident. Twenty boars have been sent in and possibly twice this number placed from this office, but we are still unable to keep up with the demand.

Dairying should be a very important industry in this district, but good beef prices and labour shortage are resulting in a decrease of interest in dairying. Pure-bred herds of Ayrshire, Jersey and Holstein are to be found. Two pure-bred herds of Red Polls were disbanded. Holsteins are in very great demand, but there is a lack of interest in Ayrshires and Jerseys.

The poultry season was very successful, with feed plentiful and production high. Blood testing was carried on as usual. Numerous good roosters were imported. Marketing was orderly, birds were in good shape and prices were high.

Edmonton (N. N. Bentley).

This district presents a wide variety of problems related to agricultural improvement work. Comprising some of the earliest as well as some of the most recently settled areas in the Province, it extends through a part of the black, transition and grey soil belts, and includes large French, Ukrainian and English-speaking settlements. Since it has had but little previous contact with District Agriculturist services, a considerable time will be required for the people of this territory to make the best possible use of this office.

Considerable attention was given to publicizing the "Grow More Barley" campaign, and good responses were noted as greater acreages were devoted to the production of feed grains. A scarcity of seed supplies of suitable varieties led to the organization of four new junior grain clubs and to the seeding of numerous demonstration plots, where prominence was given to recommended varieties.

Some increase in flax production occurred, but many farmers found it but moderately successful because of spring frost damage and weed hazards. Better fortune attended the efforts of those who made their initial attempt to grow field peas, although the need for more information concerning varieties and satisfactory inoculations was evident.

Forage crops continue to attract greater attention. In the grey wooded soil area the production of legume seed was moderately successful. Alfalfa yielded 75 to 100 lbs. of seed per acre, and sold for somewhat higher prices than in 1941.

Ample feed supplies throughout the area encouraged expansion in live stock production, while this office devoted considerable effort to encouraging the use of better breeding stock. The North Edmonton Feeder Association is in operation in the Edmonton district, where the finishing of cattle is assuming a place of major importance. In the areas west and north-west of Edmonton, increasing interest is evident in raising beef cattle as an outlet for supplies of good pasture and roughage.

A definite attempt was made to integrate the work of the District Agriculturist with farmers' organizations in order to gain their active interest and to broaden the scope of services which may be rendered in the time available over so wide an area. Increasing correspondence and numerous expressions of appreciation heard in various parts of the district indicate that the services of this office are being employed and valued by the farming public.

Grande Prairie (W. S. Scarth).

Spring weather was favourable and all crops got an excellent start. Growth was normal until the end of June, when a long spell of hot, dry weather ripened some early stands prematurely. This was especially true of oats. There was excellent harvest weather, and despite labour shortage the bulk of threshing was completed by the middle of October.

The acreage of flax was greatly increased, but some stands on weedy land were naturally disappointing. Large areas are still being produced for seed, and assistance was given to approximately 50 farmers to locate registered seed stocks.

There is a steady increase in the production of both grasses and legumes, and seed production of clover and alfalfa is now an important source of revenue in many of the grey soil communities. An indication of how quickly this is increasing is shown in the area known as the South Wapiti district. In 1938 there were approximately 10 acres of registered alfalfa in this area, and this summer 350 acres were inspected for registration. During the winter and spring of the year, promotion of the Forage Crop Encouragement Policy continued to be one of the major activities of this office. Four new associations were organized, making a total of 11 groups taking advantage of the policy this season.

There were plentiful supplies of feed for stock in all districts. Favourable weather assisted in saving an excellent hay crop, and stock went into the winter in good condition. Fourteen bulls were placed through the Bull Exchange Policy, and assistance was given in placing 12 other bulls. Seventeen boars were placed through the Swine Improvement Policy, and this office assisted in placing 30 others. Interest in horse breeding appears to be at a low point, as evidenced by the very poor prices paid at local sales. The sheep industry showed great activity during the year.

There is a general increase in dairy production. Local creameries at Grande Prairie and Valhalla estimate an increase of 15% to 20% in butter production over 1941.

Farm flocks of poultry are receiving more care and attention than in former years, and the enquiries received at this office for breeding stock and information have been more than doubled.

The season for honey production was favourable, and a great deal of information was distributed in the form of circulars and bulletins.

Hughenden (T. W. Townley-Smith).

The programme conducted from this office is based on maintenance of production through a long time soil conservation programme. Special emphasis and encouragement in increased acreages of forage crops is to be the main stepping stone to this objective. Immediate steps are based on the necessity for a change to greater live stock production and, in addition, definite use is being made of all policies that will improve the quality of the live stock produced.

Cereal production in east central Alberta varied from poor to good. Owing to dry soil at seeding time, crops got away generally to a poor start throughout the whole district. Rainfall in June improved the outlook in all but the southeastern portion of the district, particularly that area comprised of M.D. 391, part of 361 and the south-eastern corner of 392. Ample rainfall in other parts of the district produced satisfactory growth, but the crop developed very late.

In view of the large proportion of light soils, forage crops must assume a more important role if still further acreages of cultivated land are to remain productive. In the grasses, brome and crested wheat grass predominate, with the latter most prevalent in the south-eastern end of the district. Alfalfa and sweet clover are the main leguminous forages, but are grown to a much more limited extent than the grasses, and to a more limited extent than could be considered desirable.

An open winter in 1941-42 permitted live stock to start the 1942 season in good condition in most cases. Pasture was limited in the spring, but improved later to provide good feed through the summer and well into the harvest months. Delayed harvest operations prevented use of the grain stubble for Fall pasture, and deprived of this "pick-up" the stock are in fair condition only to withstand the probable long winter which started in November. Relatively few herds of dairy cattle are to be found. The bulk of the production comes from herds that are either of mixed ancestry or of a dual purpose type. Apart from those persons supplying whole milk in the towns and villages, revenue arises in the main from sales of cream to creameries.

Junior activities include one grain club, three beef calf feeding clubs and one swine club. Two of the beef calf feeding clubs were organized in the Fall months, but the other has been active throughout the year.

Lethbridge (S. S. Graham).

The 1942 season has been marked by an increased production of almost all farm and ranch products. Much of this has been due to the more abundant precipitation, but a great deal is also due to the stimulation from increased prices and demand.

Attention was given to the location and selection of pure-bred breeding stock, and assistance was offered in the prevention and detection of common troubles of swine and other live stock. Junior clubs required a considerable amount of time, and were a valuable means of contact with the farmers in the districts in which the clubs operated.

Yields and total production of all cereal crops were up in all parts of the district. Seed improvement has shown definite progress

through the activities of junior grain clubs and other agencies. Alfalfa is still the main forage crop grown in irrigated areas, with a mixture of alfalfa and brome as a basis for pasture mixtures. Timothy and brome occupied considerable acreage in the Pincher Creek district, but lack of markets for both hay and seed have somewhat discouraged this crop.

Both the tonnage and acreage of sugar beets was increased in 1942. There was a total of 1,284 growers with an average of 21.4 acres per grower. The fibre flax industry in the Picture Butte, Coaldale area is worthy of special note; 150 acres were grown in 1942, yielding 1,800 bushels of clean seed. Average yields of three-quarters of a ton per acre of the fibre were considered to give the grower a very attractive return per acre. Soy beans yields were fair only, due chiefly to difficulty in getting the crop harvested.

General conditions for live stock production were favourable. Numbers of horses declined somewhat in 1942, but some revival of interest is being shown. Dairy cattle are increasing in numbers, and there is a shortage of good quality dairy stock. There have also been increases in the numbers of beef cattle, sheep and hogs. Farmers are turning to hogs as a means of marketing their large surplus of grain. Poultry men have had a good year. Feed is plentiful, with the exception of beef scraps, which is becoming difficult to obtain. More baby chicks have been brought into the district from commercial hatcheries than ever before.

The production of honey was low, due to cold weather during the season, but orders for package bees were considerably heavier than in former years and a number of orders could not be filled.

Olds (Hugh McPhail).

The season was abnormal especially from haying time on, and due to rainfall during haying very little hay was put up without damage from rain. Harvesting was also delayed because of wet weather, and this, combined with labour shortage, has resulted in a large amount of grain remaining unthreshed.

There is still too much land being used for the production of grain, but there is a trend towards forage crops and rotations. Somewhat less wheat and more coarse grains were grown. More flax than usual was grown during the past year. Most of the manure is now being put on the land. Some farmers are sowing cover crops on fallows, while others are using strip farming to prevent soil erosion. There are a number of excellent registered seed growers in the district, and junior clubs have helped materially to encourage the use of good seed. The district is fairly well supplied with seed cleaners. Formerly there were at least three commercial seed cleaners in the vicinity of Olds, and this year five new ones were installed in the elevators.

Forage crops are assuming a more important place all the time. Brome, timothy, creeping red fescue, alfalfa, sweet clover, red clover and alsike are grown. Creeping red fescue is an excellent grass for much of this district. Some legume seed has been produced on the gray wooded soils, but the amount is still small. Brome, timothy, creeping red fescue and crested wheat grass have been produced in other parts of the district. Yields were good and prices promise to be satisfactory.

Live stock is on the increase with the exception of horses, which are decreasing in number. Several bulls were placed under the

Bull Exchange Policy, and assistance was given from this office for placement of a dozen others. Several boars were placed. One Swine Improvement Association was formed, and 20 sows and one boar were placed there. Good use was made of the Ram Exchange Policy, and in addition several rams were loaned.

Dairying is important in this district. Excellent herds have been built up in the Linden and Didsbury districts. Elsewhere there is room for a great deal of improvement. Most of the milk was marketed in creameries, but at Linden and Neapolis the milk goes to cheese factories, which will have a record output. In Didsbury, milk powder was made, but due to the scarcity of milk in Calgary this was stopped, and whole milk went to Calgary.

Junior activities include oats, barley, beef, dairy and swine clubs.

Peace River East (Euclide Hebert).

The yield of cereal crops was somewhat below normal, due to a period of drought in the earlier part of the summer. The interest in seed improvement of cereals is increasing, but distance from registered and certified seed sources, lack of knowledge on the part of farmers in the maintenance and handling of this better quality seed, higher prices and limited market for the produce have been distinct drawbacks.

The growing of forage crops, especially for seed has become of major importance in this area. The soil is of the right type, and climatic conditions are excellent for the setting of seed. In favourable years, the yields of alfalfa and clovers are away above the average for the Province.

Live stock for feed lots is gradually increasing, but not to the extent it would if underground water was more readily available. During the early part of the summer many farmers were afraid their forage crops would not set seed, and as a result cut it for hay. Upland and slough hays as well as greenfeed brought fair yields. There is a gradual tendency to increase the number of horses, but interest is varied and development is very slow. Both beef and dairy cattle are on the increase. Cattle are chiefly descendants of the dual purpose type, either Red Polls or Shorthorns, while there are a few farmers who operate small ranches of Herefords or Aberdeen-Angus. Of the dairy type, a few farmers have Jersey cattle, crosses and pure-breds. Many farmers have a few sheep, while some have flocks of 50 or more. The trend in swine production is on the increase. An average of about 4,000 hogs per month are shipped out of the district.

Thirty meetings, 23 short courses and two summer field days were held during the year, and numerous bulletins, circulars and pamphlets were distributed.

Red Deer (J. E. Birdsall).

This office serves a large mixed farming area with a fairly dense population. In the territory are several organized agricultural associations through which the District Agriculturist can work. Through these, and in other ways, field days, farmers' meetings and short courses are organized and carried out. Junior clubs take a good deal of the time of the Agriculturist, particularly the beef and calf feeding clubs. Better field crops and live stock are encouraged through departmental policies and by bringing buyer and seller together.

There was a continued trend towards forage crops in 1942. The increased acreage seeded to alfalfa was especially pronounced. The grain crop in 1942 was excellent from the standpoint of yield, but between 40% and 50% remained unthreshed at the end of the year. As grain ripened late, frost damage was prevalent, but was not severe in most cases. Flax production increased, and inexperienced growers were discouraged by the profuse growth of weeds in the crop.

The well equipped seed cleaning plant at the Lacombe Experimental Station renders a real service to the district. Large quantities of grain and forage crop seed were cleaned at a reasonable cost. The co-operatively owned plant at Innisfail cleaned about 35,000 bushels of grain in the early months of 1942. At the end of the year the machine was idle, due to the fact that it was impossible to obtain an operator.

In spite of the fact that the early winter found feeders unprepared, live stock were put on feed in large numbers, and grain was obtained from more fortunate neighbours or from other sources. Some farmers allowed stock to feed on stooks that were frozen to the ground. The horse population remains more or less static. Increases in other live stock on farms took place. Prices of breeding stock of cattle and swine were high, and the same is true of beef cattle for winter feeding. Dairy cows sold in many cases at remarkably high prices. The main limiting factor in live stock production was labour shortage.

Dairying is an extremely important enterprise in this territory. There was a large increase in production of dairy produce in 1942. Pastures were plentiful throughout the growing season, and winter feed was plentiful with prices at reasonable levels.

The junior clubs in this area have acquainted people with the desirability of having better seed and better live stock as well as having given valuable training to boys and girls. A number of farmers can trace their start in cattle feeding to the success of their boy or girl in a calf club.

Smoky Lake (W. N. Pidruchney).

Acreage sown to wheat was reduced considerably and acreage in coarse grains and forage crops increased correspondingly. The general attitude towards diversified farming is very noticeable, and greater appreciation is indicated by an average farmer towards the reduction of wheat production to a minimum, or elimination of it altogether, because of the soil and climatic conditions.

The activities of this office are directed at all times towards this type of programme, and as the years pass I begin to notice a greater degree of prosperity among those who adjust their farm operations to suit this part of the Province than among those who are slow to recognize certain underlying factors. More and better live stock is encouraged to provide for the disposal of the coarse grains and forage crops, and this programme is discussed and kept as a guiding star in all agricultural extension activities. Scarcity of labour, however, on some well organized farms will of necessity have to change some sound farming practices, but it is hoped that it will not be for long. The type of farming that has been encouraged throughout this part of the country requires more labour than straight grain farming.

Even at their best many sections of this district were not naturally endowed with the most fertile soils, and continuous cropping to cereal grains over a period of years brought about a condition that is now receiving serious thought from many farmers. Considerable area of this district is rolling land, and wind and water erosion have taken their toll. Other sections were of lighter texture and the organic matter is seriously depleted. The subject of soil rehabilitation is, therefore, a very welcome one. Not so many years ago a discussion on soils would not arouse much interest, but such a discussion is now treated with respect. Advantage is taken of every opportunity to discuss this problem and to suggest methods for its solution. Crop rotations and cultural practices are adopted by many farmers who, several years ago, would not give the subject any consideration.

The season of 1942 was very favourable for live stock. Good pastures were available during the summer months and good supplies of feed were harvested. Increase in numbers is very noticeable, especially in milking cows and swine. Horse breeding is about at a standstill.

Junior clubs continued to be an important feature in the agricultural promotion work in many districts, and required a great deal of attention from this office.

Stettler (A. J. Charnetski).

The season of 1942 opened fairly early, but intermittent rains and cool weather hampered seeding activities. On the whole, however, cereal crops, forage crops and pastures made excellent growth in every part of the territory.

The problem of soil erosion from either wind or water did not exist this year. Soil texture remained in good condition, although older cultivated soils did not produce as well as those farms which were brought under cultivation more recently. This indicates the necessity of using forage crops in a rotation as well as applying manure, commercial fertilizers, etc.

The Stettle-Coronation-Byemoor district produced one of the best crops in its history. Unfortunately, lack of man power and intermittent rains resulted in 50% of the crop remaining unthreshed. On the average, the quality of wheat is about two grades lower than last year. The popularity and appreciation of the value of forage crops cannot be questioned in this district. Several new municipalities accepted the Forage Crops Policy. Brome grass produced well, but crested wheat grass gave low yields of seed. Very little of other grasses or legumes are being sown for seed purposes at present. With the intention of indicating the most suitable grasses and legumes for the district, 26 separate plots were established on the Stettler Court House grounds in 1942.

Live stock men enjoyed quite a good year. Cattle came through the mild winter of 1941-42 in good condition, and this, coupled with good pastures, accounted for the cattle being in good condition earlier in the season than usual. Horses continue to be a drug on the market. The production of sheep received its due share of attention. Unfortunately, few farmers were interested in establishing new flocks, but a number were increased in size. Several rams were placed under the policy. The production of swine has increased considerably, and demand for services of this office was good. Increase

in the price of eggs and poultry products brought about renewed interest in this phase of farming. A considerable number of chicks were shipped into the district. The production of honey is gradually increasing, and farmers interested in apiculture benefited a great deal from Mr. le Maistre's lectures in the previous year.

There is never a dull moment for the District Agriculturist so long as there are junior clubs to handle. This branch of work continues to be very valuable from the contact standpoint. Boys who are reaching the age limit for club work and commencing to take part in public life, show more leadership and ability as compared with those who never had this training.

St. Paul (J. M. Fontaine).

More bacon for Britain, more dairy products, more beef, more mutton and more wool has been our aim for 1942 and for years to come. This means more cereals, more pastures and more breeding stock. We have selected more breeding gilts this year on special request, have distributed more grass seed, and have handled more breeding stock than in previous years.

Every year more of our natural pastures are being broken and seeded to grass. Areas composed of grey wooded soils are being sown to alfalfa for both feed and seed production. A few years ago, in this area, it was hazardous to talk forage crops and crop rotations, but today people are anxious to learn everything possible on the subject. In one municipality at least, alfalfa is grown on every farm. Last fall about 200,000 pounds of alfalfa seed was exported from the district.

Excellent crops of cereals were produced this year. The demand for registered and certified seed has been normal. This high quality seed is being distributed direct from this office through the Agricultural Association. Last spring, registered seed grain was available in this area for the first time.

Both beef and dairy breeds of cattle were in good demand throughout the year, and more assistance than ever before was given in obtaining breeding stock. Three carloads of Short-horn females were imported during the year. Facing a hard winter, as they do, farmers of this area are certainly fortunate in having ample feed on hand. Lack of interest in horse breeding is evident, and the replacement of a stallion to only one group was made. Three other stallions changed hands within the district. Although the farming population are doing everything possible to increase the flow of milk on their farms, I foresee a decline in dairy products unless something is done to retain the boys on the farm and to give assistance to producers needing help.

Contrary to some districts in the Province, it is rather difficult to arouse that interest in junior club work which is required for success in the enterprise. Two barley and one oat club were active during 1942, with a membership of 48 boys and girls. Thirty of our young people were also interested in swine club activities and calf feeding competitions.

Thorsby (Thos. Kilduff).

An increase of 12% to 15% in an already large swine population was the noticeable feature of the years' farming operations in this area. In addition, dairy production chalked up a considerable in-

crease. The marked decrease in wheat acreage made in 1941 was maintained, but only a trifling further decrease was noted. On the very great number of small farms the labour situation did not become acute enough to seriously handicap the operator. However, in the eastern part of the district, where larger farm units are found, a considerable acreage remains unthreshed, indicating that adequate labour was not available.

The season was marked by heavy late spring frosts and abnormally wet weather throughout. Slow growth of pastures as a result of the cold spring hampered dairy production in that period, but the later luxuriant growth caused the deficiency in milk production to be more than made up. Hay yielded well, from 1½ to 4 tons per acre, but very little of it was put up in first class shape. Much better than average yield of cereals obtained throughout the dark soil zone, but on the wooded soils some yields, especially of barley, were disappointing. Considerable lodging made harvest difficult and reduced yields. Marked degrading resulted from a frost in the early harvest period, but sufficient acreage had been cut to assure adequate seed supplies.

In the main, this office has been concerned chiefly with promoting healthier live stock, better feeding practices, and more efficient production. Considerable time was devoted to the encouragement of the growth of legumes for forage, for seed and for their value in the crop rotation as a soil improver and control for weeds. Throughout the season, support was given to all war-time production programmes applicable to the district.

Vermilion (E. H. Buckingham).

There is a gradual trend in the direction of producing more live stock in this district. Larger holdings and range land are being divided into smaller farms. Owing to many farmers enlisting in the armed forces or taking up war work, there was a great increase in rented land in 1942. Neighbouring farmers took over these farms to operate for the duration of the war. As less farm help is available, it is apparent that the land will be poorly tilled and weeds will increase to such an extent that crop yields will be greatly reduced.

The year 1942 will long be remembered in this district as the year of heavy rains during the growing season, the heavy crops, the early killing frost (August 30th) which resulted in low quality of grain, the rains during harvest and threshing, the difficulty in getting labour, the early snowstorm (October 23rd), and continued heavy snowfalls until the end of the year. About 40 per cent of the crop was left in stook. Pasture was excellent throughout the growing season, and there was a large surplus of hay, green feed and grain available for winter feeding.

The chief programmes conducted by this office are concerned with the improvement of cereal grains, the control of weeds, the increase of forage crop acreage, especially alfalfa, the increase in swine, sheep, cattle, milk, butter, eggs and honey production as a contribution to the war effort, as well as improvement of quality in all farm products.

Junior clubs were quite active during 1942, and it is felt that improved seed and live stock can be introduced better through these clubs than in any other way. Junior clubs have an additional value

of providing a medium for training the boys and girls in improved methods of production.

Westlock (E. G. Wood).

The main programme of activities carried on through this office during the past year was largely along the lines recommended to meet wartime demands and the production of those commodities so urgently required for export as well as for home use. Live stock work was in a large measure devoted to swine and cattle, with some attention given to promoting the sheep population. In field crops considerable effort was put forward towards increasing the acreage seeded to coarse grains, flax and forage crops. The development of the forage seed industry and the marketing of the product claimed considerable attention during the past year.

In the production of cereal crops particular attention was given to increasing the acreage of oats and barley in order to ensure an adequate supply of feed for hogs and cattle. Several small lots of registered and certified seed were introduced as foundation material.

The growing of forage crops for hay, pasture and seed purposes is playing an ever important part in the agricultural programme for this district. Soil and climatic conditions are such that grasses and clovers thrive particularly well. The growing need for more and better hay and pasture crops has stimulated a greater interest in crops of this kind. Forage seed production has become a very important source of revenue on many farms.

During the past season pastures were particularly good, due largely to the extra amount of rain which extended from June to September. All stock on pasture did exceptionally well, and milk production was well maintained throughout the season. A very marked improvement in the quality of cattle is in evidence, due chiefly to better quality feed and the introduction of pure-bred bulls through Government policies and other sources. Two Swine Improvement Associations were organized, and 43 pure-bred Yorkshire sows were placed with 27 members. The sheep industry has not shown much advancement. A limited number of rams were purchased through the Ram Exchange Policy, and some assistance was rendered through the exchange of rams already in the district. Although a certain amount of dairying is carried on, this branch of agriculture cannot be classified as holding a prominent place in the district.

Willingdon (F. Magera).

Ideal weather was experienced during the growing season of 1942. The summer was cool with exceedingly heavy rainfall, while the autumn was free from inclement weather, permitting the harvesting of a bountiful crop. Winter set in earlier than usual, necessitating longer feeding of live stock.

A noticeable change in agricultural trend was the adoption of a more considerably stabilized live stock production programme on most farms. With an abundance of grain in the bins and long feed in the stack, swine feeding, dairying and poultry raising took on a more permanent aspect.

Alfalfa growing, in mixtures and in pure stands, received stress from this office. All municipal districts except one partook in the Forage Crop Policy, resulting in the introduction and acceptance of this desirable crop in the farm production set-up. Given a few

years to popularize itself, alfalfa will be found on all farms. The practice of growing grasses for hay and pasture is well established in the district, and their value will be increased as legumes are incorporated in the mixtures.

Live stock had a very good year, as pastures were nourishing and growth of grasses heavy and prolonged. Feed supplies are plentiful for the coming winter. Horses are extensively raised, particularly in the central part of the district. The Percheron breed predominates with Belgians next in favour. The clubbing policy of stallion ownership is popular, and there are 16 associations operating. Cattle are kept for milk and meat purposes, and the Short-horn breed is well represented. Every farm has a small herd of graded-up stock. Swine production is the main source of farm revenue, and an extensive programme of breeding and feeding hogs is continued on every farm.

Junior clubs are popular and well received. Club work is well adapted to the set-up of these communities, and much good influence is imparted to the youth of the farm as a result of these organizations.

REPORT OF THE PROVINCIAL VETERINARIAN

(P. R. TALBOT)

Briefly, the duties of the Provincial Veterinarian are as follows:

1. Assistance to farmers living in districts in which no qualified veterinarian is located.
2. Prevention and control of live stock diseases which do not come under The Animal Contagious Diseases Act of the Dominion Government.
3. Supervision of the health of live stock at all Provincial Government institutions.
4. Educational work relating to diseases of live stock.
5. Carrying out the provisions of The Stallion Enrollment Act.
6. Directing the work in connection with horse promotion, under the co-operative purchase plant for pure-bred stallions.

There has never been a time when it is so necessary that every effort be made to guard against outbreaks of disease as at present. We, in this Province, should be in a position to contribute large quantities of animal products to help people less fortunate than ourselves. By drawing attention, in this report, to the diseases which occurred in Alberta during the past year, and which were diagnosed as well as controlled under the direction of the Animal Diseases Branch, it may stimulate the live stock men to greater effort in preventing similar losses during the coming year.

Alberta has been remarkably free from serious outbreaks of animal diseases during the past year. Owing to war conditions, the numbers of live stock have been increased which makes it, more than ever before, necessary to be on guard against losses in our meat producing animals. All live stock men know that keeping live stock healthy is a major part of animal production, and it is only through the fullest co-operation between the farmer and the veterinarian that this can be accomplished.

The qualified veterinarians in this Province have helped very materially in preventing the spread of various diseases which, had they assumed the form of a widespread epizootic, would have meant a serious loss to the country.

Attention should be drawn to the fact that the number of qualified veterinarians in this Province, in proportion to the number of live stock, is so small that it is extremely difficult to check disease outbreaks as quickly as desirable and necessary. For this reason it is most important that farmers should be well informed about live stock diseases so that they may advise their nearest veterinarian when outbreaks occur.

The following is a summary of the principal diseases which came under the direction of the Provincial Veterinarian's Branch during the past year:

HORSES

Equine Encephalomyelitis.

On account of the serious losses which have occurred in other countries, as well as in provinces adjacent to ours, we have continued to encourage the vaccination of horses as a preventive measure. On account of the close association between Equine Encephalomyelitis and certain diseases of the human, it is most

important that every possible precaution should be taken to prevent the disease occurring in our horses. With this in mind, a campaign was put on last spring through the press, by radio and by widespread distribution of leaflets to encourage the farmers to vaccinate as many of their horses as possible. In all, a large number was inoculated, and so far as is known no positive case of the disease occurred. It may be desirable to continue the same programme in 1943, and if this is considered advisable, we hope for the same co-operation that we have received from our horsemen during the past few years.

Swamp Fever.

We continue to have isolated cases of this disease in outlying districts. No satisfactory treatment has yet been found for this condition, but it is known that the disease is infectious and, therefore, infected animals should be kept separate from those in good health. Infected mares should not be used for breeding purposes. It is believed that the disease can be largely prevented by proper sanitation, control of intestinal parasites, supplying pure fresh drinking water and preventing horses from drinking from sloughs and stagnant water holes.

Navel Disease.

There are several micro-organisms which are causing a considerable number of deaths in young foals. The loss was quite extensive during the past year. The control of Navel Disease is largely a matter of strict sanitation and breeding hygiene. To a large extent, many of our farmers depend upon serums and bacterions as a means of protection, but continued observation, in so far as this branch is concerned, would indicate that too much dependence should not be placed on these products, either as a curative or prophylactic. The success of horse breeding must be attributed, to a very great degree, to breeding hygiene.

CATTLE

Hemorrhagic Septicemia.

This disease is probably the most serious of a group of cattle diseases that are commonly associated with the transportation of cattle. It is an infectious disease and, in some instances, results in heavy losses. Our experience, gained from combatting this disease over a number of years, leads to the conclusion that many outbreaks can be prevented if cattle are vaccinated with Hemorrhagic Septicemia Bacterin at least ten days before shipping. With this end in view, the Department, through this branch, put on a programme this Fall to have as many cattle vaccinated before shipment as possible. A leaflet on the prevention of this disease was prepared and distributed throughout the Province through the co-operation of grain elevators, drug stores, municipal secretaries, and through our own branch. Over twenty-five thousand leaflets were distributed. In this way information was placed in the hands of the persons where it would likely do the most good.

Blackleg.

This is one of the most infectious diseases of cattle and one that usually proves fatal. It is particularly prevalent in Alberta, and in spite of every effort of this branch to prevent outbreaks, it continues to make its appearance each year. The only reliable and

effective method known for the protection of cattle against Blackleg is vaccination with a reliable bacterin, filtrate or aggressin. These vaccines are available at all drug stores throughout the Province, and if used properly will confer a high degree of immunity.

Keratitis.

Several times during the past year enzootics of this disease made its appearance in various districts. There were no fatalities as far as we are aware. This disease has an economic bearing on loss of weight as well as a reduction in milk secretion. Most of the outbreaks in Alberta appear during the summer months, which gives support to the idea that dust, pollen and insects may be predisposing factors. Occasionally, however, the condition occurs amongst cattle in feed lots, and when this takes place it is likely to spread rapidly from one animal to another. Medicinal remedies are fairly satisfactory, and from recent observation it would appear as if the administration of proper bacterins, in conjunction with local treatment, is the solution of the problem.

SHEEP

A considerable number of cases of Hemorrhagic Septicemia, Blackleg, Paratyphoid and Sore Mouth were reported throughout the year. Owing to the greater production programme of sheep during the past year, the demand for information and assistance in connection with diseases in this class of animal has greatly increased. We believe one of the greatest problems confronting the sheep men is the prevention and control of parasitic infestation. Every effort must be made to prevent sheep losses, as they are probably the most essential animal to help win the war. It is the intention of this branch to continue to render every aid within its power to the large sheep rancher as well as the small flock owner to raise healthy sheep and to encourage greater production.

SWINE

The great increase in our swine production is naturally leading to a greater interest in diseases of this class of animal. Information obtained from veterinarians, farmers and those interested in the raising of swine show conclusively that the majority of our swine losses are preventable. We have always stressed the importance of sanitation, proper feeding and good care as essential in the successful rearing of swine. Poor housing predisposes swine to respiratory diseases; insanitary yards and pens to bacterial diseases and parasitic infestation. The feeding of swine has now developed into a scientific procedure, and the ration must contain the proper proteins, vitamins and minerals. When more thought is given to these fundamentals, it will be found that losses will be reduced to a minimum. We must guard against outbreaks of infectious diseases, but should these occur they can only be controlled by scientific methods.

HORSE DIVISION

The following is a report of the Horse Promotion work done during the past year. The Co-operative Stallion Policy sponsored by the Department of Agriculture has been responsible for maintaining and improving the quality of horses, besides being the strongest weapon in combating the scrub stallion menace. It is also providing a market for pure-bred stallions in districts that might still be using grade stallions.

STALLIONS PLACED UNDER THE CO-OPERATIVE PURCHASE POLICY

Year	No.	Percherons	Belgians	Clydesdales	Ave. Price
1935	16	10	1	5	\$541.00
1936	17	12	3	2	650.00
1937	27	17	7	3	615.00
1938	38	30	6	2	570.00
1939	27	21	5	1	488.00
1940	18	14	3	1	470.00
1941	26	19	6	1	400.00
1942	17	11	6	—	400.00
Total	186	134	37	15	\$522.00

Seventeen stallions were placed at the following points during 1942 at an average price of \$400 per head: Girouxville, Percheron; Jean Cote, Belgian; Enilda, Percheron; Athabasca, Percheron; Colinton, Belgian; Meanook, Belgian; Waugh, Belgian; Drayton Valley, Belgian; Ardmore, Belgian; Spedden, Percheron; Hamlin, Percheron; Sniatyn, Percheron; Ukalta, Percheron; Lavoy, Percheron; Rolling Hills, Percheron; Scandia, Percheron; Excel, Percheron.

According to statistics recently issued, there has been a decrease of 29,350 in the horse population in 1942 south of Township 44, and an increase of 20,000 north of this line. We would draw attention to this fact, that over 75% of the stallions placed under the Co-operative Purchasing Plan are owned by groups north of Township 44. This would indicate that the placing of stallions through the efforts of this branch has considerable influence on our horse population. It will be noted that in spite of adverse weather conditions, which delayed harvesting operations, 21 colt shows were held in 1942, out of the 40 which had been originally requested. These shows proved very satisfactory, in all 270 colts having been shown. Some indication of the interest taken in these shows is evidenced by the fact that the average attendance per show was 80. One outstanding feature was a class put on for boys and girls for showmanship. In all, 177 juniors took part, some of them for the second and third years, and we are of the opinion that a large number of them can now show an animal at a horse sale or in the show ring to advantage. The 21 shows were held at the following points:

Place and Breed.	Stallion.	No.
Smoky Lake, Percheron	Glen Laet	14110
Thorhild, Percheron	Lorree's Laet	16211
Bentley, Belgian	Albert De Roosbeke	6252
Ardmore, Belgian	Nnwin of Amisk	5846
Fort Kent, Percheron	Fiscal	17478
Normandeau, Percheron	Chief Laet	15537
Plamandon, Percheron	Reuben Barclay	13873
Bowden, Belgian	Park Lake Leopold	5891
Condor, Percheron	Lindee 4th	16288
Linaria, Percheron	Grand Master	15812
Wostok, Percheron	Juron	17291
Highway, Percheron	Grey Laet	14111
Kaleland, Percheron	Progress	16389
Ispas, Percheron	Musichall Laet	15768
Cadron, Percheron	Justalaet	15168
Gwynne, Percheron	Toby	13706
Willingdon, Percheron	Contender	17099
Willingdon North, Percheron	Konzeur	15668
Pruth, Percheron	Laget of Weno	14308
Whitford, Percheron	Strathmore Reuben Laet	16174
Boian, Percheron	Grey Chieftain	15813

Special mention should be made of the Willingdon and Bowden shows, the first having developed into one of the best horse shows in the Province, and the latter having provided cash prizes in all the eight well filled classes.

HORSE EXPORTS AND HORSE SALES

The past year has been a difficult one for the horse breeder. The uncertain market in and outside the Province, as well as the

scarcity of competent help on the farm, have had a detrimental effect upon the horse industry. The present competition of tractor and truck is bringing to the attention of all horsemen that only the proper type of farm horse will find a market. This will necessitate, more than ever before, the need of the horse breeder paying strict attention to the careful selection of both sires and dams in order to obtain the type and conformation of the horse desired. It is also most important that our horses offered for sale at the leading spring sales be free from hereditary unsoundnesses; in order to maintain our reputation for breeding high class horses and to encourage outside buyers we must be able to supply desirable animals.

The following statistics gives the number of horses sold at the Lacombe Horse Sale since 1930 up to and including 1942, and the Calgary Horse Sale for the past two years:

LACOMBE HORSE SALE			
Year	No. Sold	Total Sale Value	Ave. per Head
1930	357	\$16,569.86	\$82.80
1931	605	33,465.00	55.31
1932	386	22,967.50	61.08
1933	187	10,328.00	55.23
1934	203	13,764.50	67.80
1935	366	25,110.50	68.60
1936	308	25,830.25	83.86
1937	540	50,712.00	93.91
1938	684	57,540.00	84.10
1939	1,005	79,515.60	79.12
1940	815	59,288.00	72.75
1941	681	42,947.00	64.24
1942	711	49,282.50	69.30
CALGARY HORSE SALE			
1941	322	\$21,896.00	\$68.00
1942	347	25,225.00	72.69

The following are the figures for horse exports from 1938 up to and including eleven months of 1942:

To	1938	1939	1940	1941	1942
British Columbia	785	168	711	756	1,312
Saskatchewan	2,167	720	742	682	255
Manitoba	607	372	214	391	258
Ontario	3,323	1,756	1,102	279	624
Quebec	11,372	10,108	9,069	5,814	5,581
Nova Scotia	510	755	554	577	717
New Brunswick	622	737	824	454	693
Prince Edward Island	199	158	38	81	
United States	600	652	397	536	
Newfoundland				20	242
Yukon				2	
Totals	20,190	15,426	13,651	9,592	9,682

STALLION ENROLMENT BRANCH

The following is a summary of the work accomplished during the year 1942 in connection with the above branch:

Breed	Enrolled	Inspected	Passed	T.D.	To be Re-examined
Percherons	424	14	98	33	9
Clydesdales	162	42	22	16	4
Belgians	141	40	30	8	2
Shire	7	2	2		
Suffolk	6	3	2	1	
Standard Bred	8	4	2	2	
Thoroughbred	24				
American Saddle	5	14	12	2	
	777	245	168	62	15

IMPORTED STALLIONS FOR YEAR 1942

No. of Stallions Inspected	9
Percherons 1, Belgians 2, Clydesdales 1, Standard Bred 1, Thoroughbred 1.	
No. of Stallions Passed	6
Percherons 4, Belgians 1, Thoroughbred 1.	
No. of Stallions Turned Down	3
Clydesdales 1, Belgian 1, Standard Bred 1.	

TWENTY-FIVE DOLLAR RE-INSPECTIONS

No. of Stallions Inspected	1
No. of Stallions Turned Down	1

REPORT OF THE ANIMAL PATHOLOGIST

(T. LLOYD JONES)

Three years ago the Veterinary Laboratory was established to promote the principles involved in producing healthy live stock and to investigate the prevailing animal diseases. Special consideration has been given to meeting the need for a laboratory diagnostic service and for disseminating information on the prevention and control of diseases of farm animals. Observations have been recorded on conditions that warranted attention, but lack of facilities has prevented a programme of investigational and research work from being undertaken. Such facilities are desirable now, during the present emergency, because the information obtained from a well planned programme is needed to reduce the losses that always occur during a period of increased production. By increasing the numbers of farm animals, there is an increase and concentration of their diseases.

DIAGNOSTIC SERVICE

The diagnostic service has continued, without any charge being made for the examination of specimens. Twenty animal species were represented in the material received during 1942, and 1,657 specimens were examined compared to 1,435 in 1941. The plan of control of Bang's Disease has involved the testing of 1,742 blood samples taken by Veterinarians from cattle in herds under our supervision. Blood testing of R.O.P. poultry flocks was undertaken at the request of the Federal Government, and 12,573 samples were submitted to the tube agglutination test from October 8, 1942, to December 31, 1942. The same test was used on 636 blood samples from turkeys in flocks supervised by the Provincial Poultry Branch.

The following tables show the number, nature and disease conditions found in specimens received:

TABLE No. 1				
	Live	Dead	Portions	Total
Horse			19	19
Cattle	6	7	106	119
Sheep	4	10	8	22
Swine	159	244	76	479
Chicken	327	400	19	746
Turkey	11	40	13	64
Goose	1	5		6
Pigeon		1		1
Peacock		2		2
Partridge		2		2
Fox	11	39	4	54
Mink	19	70	5	94
Marten		2		2
Muskrat		1		1
Nutria		3	1	4
Chinchilla		1		1
Mountain Sheep		5		5
Dog		2	5	7
Cat			2	2
Rabbit		4	1	5
Miscellaneous			22	22
Total	538	838	281	1,657

TABLE No. 2—POULTRY

	Chicken	Turkeys	Miscellaneous	Total
Abscess	5		1	6
Blackhead	2	3	1	6
Cannibalism	5			5
Chilling or Overheating	93	5		98
Coccidiosis	156	11		167
Egg Bound and Internal Laying	8			8
Embryo Mortality		6		6
Enteritis		1		1
Fowl Cholera		7		7
Fowl Paralysis	48			48
Fowl Typhoid	1	2		3
Impaction	1			1
Injuries	2		1	3
Laryngo Tracheitis	13			13
Leucosis	98			98
Nutritional Disorders	76	2		78
Omphalitis	4			4
Parasites, Internal	27	11	2	40
Parasites, External	9	1		10
Pneumonia	4	2	1	7
Poisoning	6	1	1	8
Pullorum, Adult	12			12
Pullorum, Chick	118	1		119
Roup	9	4		13
Tuberculosis	42	4		46
Tumours	2			2
No evidence of Disease or Putrid	34	7	5	46
Total	782	61	12	855

TABLE No. 3—SWINE

Abscess	3	Pasteurella Infection	27
Anaemia	49	Peritonitis	17
Anaphylaxis	1	Pneumonia	36
Avitaminosis	20	Poisoning	3
Brine Poisoning	2	Rickets	2
Cretinism	1	Roundworms	43
Coryne bacterium Infection	1	Salmonella Infection	6
Dystokia	1	Sunscald	1
Errors in Feeding	123	Swine Erysipelas	50
Gastritis and Enteritis	34	Swine Influenza	3
Haemorrhage of Liver	1	Tapeworm Cysts	2
Hepatitis	1	Thoracopagus	1
Infection of Newborn	39	Tumour	1
Leukaemia	1	Whipworm	1
Malignant Oedema	5	Miscellaneous	4
Mange	10	No evidence of Disease or Putrid	12
Necrotic Enteritis	36		
Necrotic Stomatitis	2		
Osteomalacia	1	Total	520

TABLE No. 4—MISCELLANEOUS SPECIES

	Horses	Cattle	Sheep	Fox	Mink	Nutria	Muskrat	Rabbit	Cat	Dog	Marten	Chinchilla	Mountain Sheep	Miscellaneous	Totals
Abortion		5			2			1							5
Abscess		5	1												6
Acetonaemia		2						1							3
Acidosis					3										3
Avitaminosis				1	2										3
Blackleg		7	1												8
Blood Samples														10	10
Calculi					2										2
Coccidiosis					5			1							6
Coryne bacterium Infection		1													1
Cystitis					2										2
Distemper				29	14										43
Dystokia					1										1
Errors in Feeding			1		10			1							12
Faecal Samples				2						4					6
Feed					7	9								1	17
Food Poisoning															
Forage Poisoning	1	2													3
Gastritis and Enteritis			1	1	6	1					1				10
Hair Ball		1													1
Hemorrhage				2											2
Infection of Newborn			1												1
Injury				1						1					2
Mastitis		26	1												27
Meat														6	6
Milk Samples		53													53
Neoplasm		1	1						1	1					4
Nursing Sickness					3										3
Nutritional Anaemia					1										1
Over Eating			2												2
Osteohaematochromatosis		1													1
Pasteurella Infection		10	2												12
Phimosis					2										2
Pneumonia		3	5	22	4						1	1			36
Poisoning		3	2		2										7
Pregnancy Disease			4												4
Pulmonary Emphysema			1												1
Pulpy Kidney			1												1
Rickets					1										1
Roundworms						1	1		1						3
Rupture of Stomach				1											1
Septicaemia				1											1
Stable Blackleg		1													1
Stiff Lamb's Disease			3												3
Strangles	2														2
Strept. Infection		2	1										5		8
Strongyles	5														5
Tapeworm				2											2
Tapeworm Cysts								2							2
Water														4	4
Miscellaneous	3	2												5	10
No evidence of Disease or Putrid	7	15		2	2					1					27
Total	18	140	23	54	89	6	1	5	2	8	2	1	5	29	383

BIOLOGICAL PRODUCTS

Under the Department's plan of calfhood vaccination in the control of Bang's Disease, 243 doses of commercially prepared Strain 19 Brucella vaccine were distributed to Veterinarians from this laboratory.

We have prepared autogenous bacterins in a few instances, where these seemed worthy of a trial, for the purpose of controlling outbreaks of germ infections in different species of farm animals.

Enough formalized tissue distemper vaccine (autogenous) was prepared and distributed to vaccinate 6,550 foxes and 2,250 mink.

POULTRY

Examination of poultry specimens revealed the same conditions as last year. Twice as many cases of coccidiosis were recorded, due to the wet weather during the late spring and summer, compared to the dry spring of 1941.

Increased production of poultry products has emphasized the need for work to be done by a specialist in avian pathology, so that this important industry can be given the attention it deserves. It is not satisfactory to rely entirely on the findings of work done elsewhere. We have special problems that have to be worked out under Alberta conditions. Up to the present we have been unable to do any more than give advice on the results of autopsy findings, but we hope that provision will be made for special work to be done on poultry diseases.

SWINE

Losses among swine are still greater than they need be. Inadequate housing and improper feeding are largely responsible for this, but with a simultaneous increase in production and decrease in available labour, it is difficult to reduce an estimated 20% mortality which has prevailed for the past four years. That the percentage has not become higher as the numbers have increased suggests some improvement in management.

There is, however, no limit to the investigational work that should be planned so that more effective preventive measures can be determined to help in reducing this serious economic loss.

The need warrants the suggestion that facilities should be provided for a programme of investigation and research into the prevailing diseases to be undertaken. Consideration should also be given to the fact that the problem of disease is closely linked with that of nutrition, and both should be included if such a programme is to produce the desired results.

FUR-BEARING ANIMALS

Considerable time has been given to the investigation of an outbreak of distemper in foxes on a large ranch. Vaccine was prepared by using tissue from foxes showing symptoms of the disease. It was shown that formalized tissue vaccine will not prevent an outbreak from continuing its course if the infection has become well established before the vaccine is used. On another part of the ranch, however, we had a supply of vaccine ready to use as soon as the first case was diagnosed, and vaccination proved to be a valuable procedure in protecting animals that were exposed to natural infection.

Mink distemper occurred on the same ranch, but no conclusive evidence was obtained that the vaccine had provided any degree of protection.

Through the co-operation of Mr. W. S. Beggs, South Edmonton, we were able to report (Canadian Journal of Comparative Medicine, September, 1942) on the results of feeding cold pressed wheat germ oil to minks. Our report carried the following conclusions:

"A greater increase, larger litters and fewer non-producing minks in a control group of breeding females, not receiving cold pressed wheat germ oil indicated that the oil, when fed to the same number of minks according to the manufacturer's directions, had no beneficial effect on reproduction."

An outbreak of Chastek Paralysis in foxes was investigated, and it is probably the first to be reported in Canada. This condition results when foxes suffer from a deficiency of thiamin (Vitamin B₁) in the ration. The deficiency in this case was induced by the feeding of Pacific-coast herring (*Clupea pallasii*). This species of

fish is a new addition to the list of fishes which have a factor capable of inactivating thiamin. Horse meat, which is the principal constituent of fox rations, has an abundance of thiamin to satisfy the demands of the fox, but when certain species of fish are added this vitamin is destroyed. An observation made in the outbreak in question was the fact that pelting had been under way for some time before signs of a deficiency became apparent. At such a time it is difficult to estimate how much feed will be necessary for a day's requirements, and there is often some of the ration left over to be used on the following day. Because of this carry-over, it seems likely that the increased time the fish and meat were in contact resulted in a more complete destruction of thiamin. To overcome this deficiency, rich sources of thiamin, such as liver, should be given, and the feeding of fish should be discontinued temporarily. When there are no further signs of the deficiency, fish may be added to the ration, but it should be left out at least one day in three, so that thiamin will be obtained from the meat, to satisfy the animal body's requirements for this essential vitamin.

MISCELLANEOUS SPECIES

A variety of conditions have been recorded from a number of animal species, many of which might deserve comment in a more detailed report. Shipping fever in cattle is still common. Preventive inoculation with a bacterin is cheap, and it is hoped that this practice is being more widely used. It is difficult, however, to induce the producers of beef cattle to undertake this responsibility when their interest in the stock ceases, on selling to the feed lot operators. The disease most frequently occurs when animals are shipped, especially if there is exposure to severe weather; thus losses are most serious among feed lot cattle.

BANG'S DISEASE

The Veterinary Director General for Canada has now made Strain 19 Brucella vaccine available to qualified Veterinarians. This has made it no longer necessary for the vaccine to be distributed from the Veterinary Laboratory.

Veterinarians are now free to use this vaccine according to their own judgment. The Department, however, has a plan for issuing certificates in respect to calves that have been properly vaccinated. Apart from the value of these certificates at the time vaccinated calves are being sold as heifers, this free service should appeal to Veterinarians and herd owners alike because the procedure of calf-hood vaccination can be undertaken with greater confidence.

The Department of Agriculture will co-operate with herd owners and their Veterinarian by providing the following services:

1. The testing of samples of Brucella vaccine for viability, when required.
2. The supervision of a plan involving the free testing of blood samples at the Provincial Veterinary Laboratory, when they are properly secured and submitted by a qualified Veterinarian.
 - (a) At the time the Veterinarian is called to inject calves with vaccine, he will first take blood samples from all those to be vaccinated and forward these to the Veterinary Laboratory for testing.
 - (b) Four to six weeks after vaccination the Veterinarian will take blood samples from vaccinated calves to determine whether the vaccine has "taken". If this test is positive (and if it was negative before vaccination), a "certificate of vaccination" will be issued.
 - (c) Calves giving a negative test will not be eligible for a certificate, but must be vaccinated again. If a subsequent blood test is positive, a certificate will be issued.

- (d) This service applies only to calves vaccinated between the ages of four to eight months of age.
- (e) Vials for taking blood samples, charts, certificates and eartags, where necessary, shall be supplied by the Department.

EXTENSION SERVICE

We have continued to work with the Director of Agricultural Extension by contributing to meetings, field days, etc. A large volume of correspondence requesting information on problems relating to animal diseases has been attended to, and a great deal of time has been spent in discussing these problems with Veterinarians and farmers who have visited the Veterinary Laboratory.

REPORT OF THE PROVINCIAL APIARIST

(W. G. LE MAISTRE)

GENERAL

	Production in lbs.		Price to Producer		Value in Dollars	
	1941	1942	1941	1942	1941	1942
Honey	3,120,000	2,500,000	12c	14.5c	374,400	362,500
Beeswax	40,500	35,000	37c	40c	14,200	14,000
					<u>388,600</u>	<u>376,500</u>

Season.

The climatic conditions prevailing during the spring made it necessary for beekeepers to feed their bees heavily. The rain and cool dull weather resulted in the bees being unable to take full advantage of the early sources of nectar and pollen usually available. It is extremely important that bees obtain ample supplies of both pollen and nectar if they are to have strong colonies ready by the time the main honey flow commences in late June. These products must be given to the bees when they are not available naturally. The fact that this was not done in many cases adversely affected the condition of the bees and the resultant crop of honey.

The main honey flow was the poorest in Alberta since 1935, the result, it is thought, of the continued wet, cool and cloudy weather during the period when the nectar secretion is usually at its best.

Bees.

	1941	1942	
Number of Hives	24,000	27,500	14% increase
Number of Beekeepers	2,400	3,800	58% increase

Since 84% of our colonies were built up from packages, we are greatly concerned by factors affecting the bee breeding industry in the southern United States, the source of supply.

Labour shortages, irregular transportation schedules and inclement weather all contributed in delaying shipments of bees this year. These factors also adversely affected the quality of the bees that arrived. This was particularly noticeable amongst queens, a larger percentage than usual being superseded. This supersedure resulted in abnormal swarming, in which the swarms absconded with the young queens, sometimes several in one swarm.

Beginners, not knowing how to counteract these situations, were particularly handicapped, their results being frequently discouraging.

A gradual move to wintering more hives is in evidence. This move is desirable. A good deal more experience is necessary before enough success is achieved to warrant large scale wintering. Once a reasonable degree of success is achieved it should become an established practice, since all experiments point to its economic feasibility.

	1940-41	1941-42
Colonies being wintered, per cent of total	27	29
Colonies that survived, per cent of those wintered	62	71

Flora.

The acreages of cultivated nectar secreting plants continue to increase in the central and northerly, and decrease in the southerly parts of the Province.

Some of the native plants, particularly fireweed, is becoming more rare in cultivated areas. However, it is being replaced by clovers and alfalfa. Furthermore, clovers are becoming established in pastures, waste lands and along roadsides to such an extent that they are replacing the disappearing natural flora as sources of nectar.

Plants yielding nectar this year were in excellent condition as far as could be judged. Growth seemed very great, and prospects for a yield were excellent. Examination of an abundant bloom showed nectar in ample quantities. It is assumed that the sugar concentration was so low as to be unattractive to bees. Only during brief spells was bee-flight heavy during the normal flow period.

MARKETING

A revolution in honey marketing occurred this year. Normally, nearly all the commercial honey is sold through wholesale agencies. This year most of the honey was sold direct to the retail stores or the consumer. This was possible because sugar rationing created an unusual demand.

The price that the producer realized was, in consequence of cutting out the wholesaler, considerably higher than the ceiling would have allowed him to obtain by selling in the usual way. In view of his small crop, an increase in price was necessary to keep him in business, and with the price ceiling in effect there did not seem to be any other course. Under normal conditions, when the crop is small, some increase in the wholesale price occurs.

	1941	1942
Producer to Wholesaler, per case 8's	\$6.00	\$6.25
Producer to Retailer, per case 8's		6.75
Average price per pound received by producer	12c	14.5c

No new markets have been developed, as supplies were insufficient to satisfy the local domestic demand. Several industries became keenly interested in using honey, but the restrictions of the Food Controller, designed to direct supplies to the domestic consumer, limited the use of honey in this trade.

DISEASE CONTROL

The season was a particularly difficult one in which to conduct inspection of apiaries. In many instances there was insufficient brood in the hives before the middle of June to enable inspectors to discover disease. Then wet weather during so many days prevented work. Fortunately, by having inspectors distributed about the Province when good days did occur, it was possible for them to inspect without delay. Nine men were employed by the day to do this work.

	1941	1942
Number of hives inspected	7,621	7,940
Number apiaries inspected	825	803
Number of hives diseased	299	145
Percentage of Inspected Hives diseased	3.9%	1.8%
Percentage of all hives diseased	1.25%	.52%
Number of beekeepers registered	2,293	3,411
Number of beekeepers not registered (estimate)	100	400
Number of hives registered	23,223	24,559
Number of hives not registered (estimate)	1,000	3,000
Percentage of beekeepers not registered	4%	11%

The number of diseased hives destroyed this year was only half the number destroyed last year. It is too soon to conclude that disease is being effectively controlled, however, though this reduction is encouraging.

Controlling disease would be more effectively and economically done if more inspectors were employed. It is difficult to obtain men suitably equipped to do this work under conditions of gasoline rationing and tire and labour shortages.

A diagnostic service is maintained. Beekeepers suspecting disease in hives send in samples. When these have been examined, the sender is notified as to the proper action to take. When the disease of American Foulbrood is discovered, an inspector is sent to investigate, because of the seriousness of this particular disease.

EXPERIMENTAL

The experimental apiary was moved from the School of Agriculture at Vermilion to the Provincial Government Poultry Plant at Oliver. It will be operated on various tests of value to the industry. At the present time the matter of personnel to attend to this apiary is receiving some attention. No significant tests were conducted during 1942. Difficulties of personnel and supplies necessary to projected tests were unavailable owing to war conditions.

Accommodation in the form of a honey house is required.

EXTENSION

This branch is unable to satisfy the demand for speakers and demonstrators at meetings and field days. It has been necessary to have the inspectors assist in this work from time to time. Practically all the meetings were ably arranged and managed by the District Agriculturist.

A new bulletin entitled "Wintering Bees in Alberta" was published. An increased demand for our various publications about bees is an indication of the accelerated interest in beekeeping.

Because so many winter meetings are held, it would be extremely helpful were it possible to obtain more up to date illustrative material in this subject.

It has been suggested that bees would make a suitable subject for a boys' and girls' club. We are not aware of any in Alberta.

The Provincial Apiarist is Secretary of the Alberta Beekeepers' Association, an organization of beekeepers whose interest is in furthering the welfare of all beekeepers.

NEW DEVELOPMENTS

The Alberta Honey Producers' Co-operative, Ltd., has an arrangement with the Southern Alberta Dairy Pool at Calgary, whereby the Dairy Pool has established a honey processing unit. It accepts honey in bulk from members on a co-operative basis, repacks and sells the honey. This is the first co-operatively operated honey plant to be established in Alberta.

A serious attempt is being made, at the request of producers in convention, to prevent overcrowding in bee locations. Much of the success of an effort of this kind depends on the willingness of the beekeeper to co-operate.

Several wartime Price and Trade Board orders are affecting the beekeeper. Most of them are designed to favour the production of honey, and direct as much honey as possible to the use of the housewife.

REPORT OF THE ACTING SUPERVISOR, RELIEF SETTLEMENT PLAN

(E. B. SWINDLEHURST)

Settlement under the Relief Settlement agreement was discontinued on March 31, 1942, but no settlers have been placed on land in the Province of Alberta since July 29, 1941. Families settled in 1940 and 1941 have received some assistance during 1942 since the period of assisted settlement will not expire in these cases until the years 1943 and 1944 respectively. Such assistance has, however, been reduced to the minimum, and it is expected that several of these settlers will be able to continue without further expenditures by the Department.

The Relief Settlement Plan has now been in operation for a period of ten years, and in addition to the saving in direct relief expenditures, numerous families who would have continued as direct relief charges during the depression period are now satisfactorily established and providing a comfortable livelihood. Repayments made to date by successful settlers exceed \$15,000.

A total of 1,092 families have been placed on farms since the inception of the plan in 1932, but it has been necessary to salvage the effects of 567 of these families (51.9%) for a variety of reasons, including enlistments (67), failures (183), other employment (191), and other causes (126). As a result of salvage operations, an amount in excess of \$60,000 has been received and credited. In the early days of the settlement policy an estimate that 50% of those settled would continue to farm as a permanent occupation was considered over-optimistic, but under normal conditions it is not unlikely that this estimate would have proved quite conservative. In December, 1939, the abandonment figure was 34%, which included nine enlistments and 155 failures. Since that time the number of failures has increased by 28 only, the remaining abandonments having been due chiefly to enlistments and the increased demand for labour in connection with war services.

REPORT OF SCHOOL OF AGRICULTURE, OLDS

(JAMES MURRAY)

The School of Agriculture at Olds is now the only one in operation in the Province, the one at Vermilion having been closed after the session of 1940-41. It is being used for the duration by the Dominion Government as a training centre for the C.W.A.C.

The 1941-42 term was brought to a close early in April. Diplomas in practical agriculture were awarded to 41 young men and diplomas in Home Economics to 36 young women. Three students in Agriculture were conditioned in two subjects, and it is hoped that they will later receive their diplomas by writing off the necessary papers. The address to the graduating class was delivered by Dean R. D. Sinclair of the Faculty of Agriculture of the University of Alberta. The prizes were presented by Mr. J. R. Sweeney, Deputy Minister of Agriculture. The valedictorian was Stanley Gould of Rosalind.

Following is a list of scholarships awarded to students of the 1941-42 school year:

From the Alberta Wheat Board Monies Trust, scholarships of \$100.00 each to the following graduates in Agriculture who register at the University of Alberta for a degree course—Francis Spencer, Magrath; Douglas Barnes, Bindloss; Stanley Gould, Rosalind; Louis Chauvet, Legal.

A Scholarship of \$100.00 to the graduate in Home Economics who registers at the University of Alberta for a degree course in Home Economics—Awarded to Ruth Whaley, of Notikewin.

Scholarship of the value of \$75.00 to the student in the first year course in Agriculture standing highest in the year's work—Awarded to Stephen Fushtey, Wasel.

Scholarship of the value of \$75.00 to the student in the first year course in Home Economics standing highest in the year's work—Awarded to Eveline Shirtcliff, Bentley.

Mr. A. L. Searle, President of the Searle Grain Company, again offered two Scholarship each of the value of \$50.00 for progress made during the first year's work. The one in Agriculture was awarded to Omer Graff, Ferintosh, and the one in Home Economics to Grace Paverly, Wembley.

Girls' Alumnae Scholarship of \$50.00 to the student in Home Economics who makes satisfactory progress in academic work and makes contributions of value to the athletic, social and literary life of the school—Awarded to Katherine Torscher, Whitla.

The O.S.A. Experimental Union Scholarship is awarded on the same basis as the above to a student in Agriculture—The winner was Earl Lowe, Pickardville.

The Alberta Women's Institute Scholarship is awarded to a first year student in Home Economics who has a creditable scholastic record for the year and has made valuable contributions otherwise—The award went to Mildred Luehr of Taber, but reverted to Esther Hammermeister.

ATTENDANCE

Our students this year are drawn from all parts of Alberta with two from British Columbia and one from Saskatchewan.

The classes this year are made up as follows:

	Agriculture	Home Economics
First Year	58	27
Second Year	31	18
Two-in-One	19	13

Practically all students come from farms, and with few exceptions they return home when the course is completed. Each year a few graduates continue their studies at the University, but this year the number is lower than usual, quite a number of graduates

having joined the armed forces. Three graduates in agriculture are registered in the Faculty of Agriculture and one for a degree course in Home Economics.

While we have as many students as we can accommodate, the armed forces have claimed many who would probably be registered as agricultural students. In pre-war days we had a considerable number of students between the ages of 20 and 30, and a few over 30. The average age then was between 19 and 20. This year the average age of agricultural students is between 17 and 18. Several who started last October have since joined the army, and others have had their call deferred until spring.

Another interesting comparison, not affected by the war, relates to the amount of schooling that students had before entering this school. In the first class to register here in 1913-14, only three students in Agriculture in a class of 55 had more than a grade eight standing, or 5.5 per cent. Of the class of 114 who entered in the fall of 1941, 93, or 81.6 per cent, had gone beyond the eighth grade.

The difference in the case of Home Economics students was not as great, but was noteworthy. In the first class, 27.3 per cent had over grade eight, and in the 1941-42 class the percentage had jumped to 83.8.

Students have always been admitted provided they had sufficient English to take advantage of the work offered. Many who had only grade seven or grade eight made excellent progress here, and a fair percentage continued their work at the University after getting our diploma.

For a number of years we offered a third year course to those who, as mature students, wished to take additional high school work and continue their training at the University, but for some years there has not been sufficient demand for this course to warrant its being given.

STUDENT HEALTH

Some years ago we had serious outbreaks of such diseases as measles, chickenpox and mumps which, in a large residence, are difficult to control when once they are introduced. Last year we were singularly fortunate. We had one case of chickenpox after Christmas, but no others developed, and then a few days before school closed, several cases of mumps broke out. Fortunately we were able to send them all home, as they lived within 50 miles of Olds. We still do not know how we will fare this year.

Owing to the shortage of medical services in Olds, we were unable to have complete physical examinations of all students by a doctor. However, our nurses examined them all, and had a doctor re-examine any who seemed to need a closer check-up.

Our facilities for looking after the sick are most inadequate, and we are hoping they may be improved in the not too distant future.

STAFF CHANGES

Our teaching staff is the same as last year except that Mr. N. N. Bentley is taking the Field Husbandry lectures and laboratory work. This was formerly divided among three instructors.

COURSE OF STUDY

There has been little change in the course of study, which was outlined fairly fully in last year's report. The course in Social Studies given a year ago to the Second Year and Two-in-One classes was dropped, and an elementary course in Rural Sociology substituted.

SUMMER COURSES

We were hosts in June to two Dominion-wide conventions, the Canadian Seed Growers' Association and the Canadian Society of Technical Agriculturists. At the former, there were about 150 delegates, and at the latter about 200. Delegates were present from all the provinces, and the School got considerable favourable publicity.

Farm and Home Week was held during the latter part of June. The weather was favourable except for one day, so that we had a good attendance. Farm machinery, adjustment, repair and upkeep was featured. Professor E. A. Hardy of the University of Saskatchewan was the feature speaker, and was acceptably received by good audiences.

The School of Community Life had its sixth session during the first ten days of July. This school is a co-operative effort by the University Extension Department and the Departments of Agriculture and Education. Professor R. G. Riddell of the Department of History of the University of Toronto contributed liberally and most acceptably throughout the course. The other speakers were also well received. The attendance varied from 50 to 75 from day to day.

The Alberta Women's Institute Girls' Clubs held their annual session for four days following the School of Community Life. The attendance was down somewhat on account of tire and gasoline shortages, but about 50 were in attendance. Mrs. McGorman of Penhold ably supervised the activities of the young women.

Farm Women's Week, held during the last week of July, was attended by about 80 women. A varied programme was provided, featuring the drama presented by Mrs. Weller of Calgary. Our Home Economics staff contributed liberally to the programme, as also did Mr. Kemp, lecturer in Horticulture.

A week was provided this year for scholarship winners from the various grain and live stock clubs in Alberta. About 120 boys and 15 girls were provided with an interesting programme for five days. The week's entertainment and instruction was in the nature of a reward for high standing in the year's club activities.

A limited number of lectures and demonstrations were given, periods provided for organized games and competitions. Five scholarships, each of \$75.00, were awarded to students who appeared to the staff to be outstanding in the activities of the week. The winners were as follows:

Beef Clubs—Robert Tolman, Rumsey.
Dairy Clubs—Walter Baerg, Swalwell.
Swine Clubs—Harry Ostapiw, Spedden.
Wheat Clubs—Nick Sheptycki, Chipman.
Oat and Barley Clubs—Harry Wolosuk, Vauxhall.

APICULTURE

The interest in beekeeping in the Olds district has been increasing steadily for several years. In 1941, 36 packages were

handled through the apiarist at the School, while in 1942, 99 packages were shipped in. Meetings of beekeepers were held, and several visits made to the individual beeyards. At the close of 1942 the Olds and District Beekeepers' Association was formed. The two colonies at the School averaged 155 pounds of extracted honey in 1942. The average per colony for the past seven years is 176 pounds.

GRAY SOILS

Three definite rotations on three different farms are now included in the Gray Soils Extension Programme. Each of the rotations is conducted in a field averaging 10 acres in area. Forage crops are seeded down for two years and are then to be followed by two years of grain. The forage crops receive most of the fertilizer, and wonderful responses are obtained, especially from elemental sulphur and sulphates. It is expected that the legumes will store sufficient nitrogen in the soil for two satisfactory grain crops.

A comprehensive experiment is being conducted on an alfalfa field in the Sundre district to study the kinds and rates of fertilizers and to compare different materials as sources of sulphur. The following table taken from the general results will indicate the kind of results being obtained.

YIELD OF DRY ALFALFA IN POUNDS PER ACRE	
Treatment	Yield
Unfertilized	1.789
Gypsum at 100 lbs.	6.385
Amm. sulphate at 75 lbs.	5.765
Sod. sulphate at 163 lbs.	6.595

EXPERIMENTAL UNION

This organization had a membership during the past year of around 300, many of them ex-students. The selections offered from surplus stock included vegetable and flower seeds, perennial plants, seedling fruit trees, rhubarb roots, shrubs, grass seed and raspberry plants. Members are distributed in all parts of the Province, with a few in other western provinces. The material distributed through the Experimental Union has been the means of improving many hundreds of farmsteads in Alberta and of starting farmers in good varieties of potatoes, grains and grasses.

The Union makes a contribution of a \$50 scholarship each year to the school prize list.

FIELD HUSBANDRY

In many respects, 1942 was a very favourable year for crop growing, and hence for carrying on experimental work with crops. It will probably long be referred to as a wet season, whereas in fact the precipitation was only .66" above. The total for the year was 18.77 inches. The distribution, however, was wonderfully good, as there were 14 days in each of the three months, July, August and September, when rain fell. There were besides many dull, cool days excellent for growth, but not good for ripening crops.

Phenomenally good yields were secured from all cereals. One variety of oats, Eagle, produced at the rate of 176 bushels per acre in the variety test plots. An acre of the comparatively new variety, Ajax, yielded 146 bushels. All plots were badly lodged, as the straw was longer than usual, and some severe storms were experienced as harvest approached. Early maturing varieties showed up

particularly well, as they were well filled before they suffered much from lodging.

Royal flax was grown for the first time this year. It is highly recommended for districts with a long season and where rust is prevalent, but it is quite too late for this part of Alberta. Red Wing has still no equal for the central and northern parts of the Province.

Rather remarkably, Soy beans made a more satisfactory growth than they did in previous years. Kabott, Pagoda and Manitoba Brown all produced some ripe seed. However, the amount ripened per acre was quite low, and one would not be justified in recommending them as a crop for this part of Alberta. They were the object of much interest to visitors during the summer.

The selection made here of Creeping Red Fescue (*Festuca rubra genuina*) has been accepted for registration by the Canadian Seed Growers' Association, and the 1942 crop was passed as foundation stock seed. About 100 pounds of seed will be available to seed growers for the production of registered seed.

HORTICULTURE

Real progress has been made in recent years in horticultural work—in fruit growing, the production of vegetables and in floriculture. We have about 450 varieties of crabs and apples on trial. Many of the trees yielded almost too abundantly, as branches had to be propped to prevent damage to the trees. Many varieties had fruit three to four inches in diameter and of good quality. Plums, pears and apricots occupy a less important place, but a number of varieties of plums produced heavily. Pears and apricots have yet to prove themselves, but some varieties appear to be hardy and will probably bear in a few years.

Some 40 varieties of strawberries are on trial, many of them recent introductions. From these we hope in a few years to have plants for distribution to growers in the Province.

No small amount of time is required during the summer to show visitors over the orchards and fruit plantations. This is well spent energy, as "seeing is believing." Many visitors have never seen heavily laden fruit trees in this Province, and they thus get a new conception of its fruit growing possibilities. Since our growing conditions here are not specially favourable—our altitude being nearly 3,400 feet—many of those who see are encouraged to do some planting on their own places.

Vegetables in great variety and in considerable quantity are grown, as supplies are required to supply the dormitory during the school session from October to April. An effort is made to grow our requirements with the minimum of labour and to yield a product of high quality. The extensive use of vegetables in the diet now recommended so frequently, is largely dependent on growing a high grade product economically and storing them so that they are in prime condition throughout the season from October until a fresh supply is available the following year. For storage, a good root cellar is a sound investment.

Our collection of perennial plants and ornamental shrubs is becoming better each year, so that the display of bloom is more attractive. Those who see the grounds and gardens during the summer are encouraged to extend their planting, and thus make their home surroundings more attractive.

THE SCHOOL FARM

The farm is maintained and operated primarily to provide live stock of the various classes for instructional purposes with the students in Agriculture. Small pure-bred herds are maintained of Percheron horses, Shorthorn, Ayrshire and Angus cattle, Hampshire sheep and Yorkshire hogs. Surplus stock is sold to farmers for breeding purposes. The grain and hay raised on the farm is all used for the live stock.

There has been a wonderfully good demand for all classes of stock except horses. We have several young Percheron stallions on hand that we would like to dispose of in the spring. All the other classes of stock have been thinned out during the year to ready buyers. We have thus been able to improve the general quality of stock. The demand for breeding stock of hogs has been particularly good, many orders having been turned down.

We have under cultivation on the home farm about 250 acres; on the farm two miles south, 160 acres has been under cultivation for a number of years. Another 60 acres was broken in July, 1942. At present, a half-section south of the home farm is rented. The Aberdeen Angus herd is maintained on this farm. This farm is in a very dirty, run-down condition, but this year gave a fairly good return in hay, pasture and green feed.

The crops on all the other cropped land were excellent, due to the land being in a high state of cultivation and a fair rainfall, wonderfully well distributed. We had some rain every week from May 25th to the middle of September. Hay was abundant, but cured with difficulty on account of frequent rains. Harvesting was slow, tedious and expensive, as the crop was badly lodged. Threshing was only half done when winter set in, so much of the crop is in stooks under the snow. Fortunately we were able to get enough threshed to keep us going until the spring.

During the year an Aberdeen Angus bull, Bar Estou 65688, was bought from Henderson of Lacombe, and a Shorthorn yearling bull, Gold Bar Monarch 249253, from Claude Gallinger of Tofield. Both of these are developing very satisfactorily, and should materially improve our herds.

Labour has been scarce, and a number of changes have been made, but so far we have got by very well. With the continued co-operation of all the men, we hope to be able to carry on during the coming season.

The farm has been under the able management of Walter K. Ross, who has co-operated whole-heartedly with the teaching staff of the School throughout the year.

THE SCHOOL FARM AT VERMILION

The information on which this report has been based was submitted by Gordon Ogston, Manager of the Vermilion Farm.

The area included in the farm is approximately 1,200 acres. Of this, half a section is leased, and several hundred acres of the deeded land is unbroken. Since the closing of the School of Agriculture in April, 1941, the farm herds and flocks have been materially reduced in size. Fifteen head of horses have been sold, but we still have 26 head on hand, 23 of which are pure-bred Clydesdale. Five foals were raised during the year, and four mares were bred to Craigie Winsome Lad. The Shorthorn herd was dis-

posed of with the exception of two young bulls that will be sold in the spring

Forage crops have been given prime consideration on this farm for a number of years as a means of not only furnishing feed, but to improve a rather light soil and to control soil drifting. Various mixtures have been used, alfalfa forming the base, and such grasses as brome, crested wheat, red fescue and Kentucky blue added. The abundant rainfall of 1942 made even the oldest fields produce a fair crop of hay. At the same time, it made it difficult to kill the grass in the meadows that were plowed in July.

Over 200 acres of tame hay were cut, the average yield being from one to one and a half tons per acre. Curing was a slow, tedious job. Crested wheat grass and creeping red fescue both set good crops of seed, but it was not all harvested on account of bad harvest conditions. Alfalfa set a fair seed crop, but it did not ripen.

The well distributed summer rainfall resulted in good grain crops being harvested. Unfortunately, winter set in to stay before all the oats and barley were threshed. The oat crop that was threshed yielded 75 bushels per acre and the barley 52 bushels. A good crop of sunflowers on eight acres and some oats, cut green, were used to fill the silo.

There was a heavy crop of fruit, crabs and apples, with a ready market for it locally. Considerable nursery stock of such things as poplar, fir, and crabapple seedlings were disposed of locally last spring.

The honey flow was lighter than usual on account of the frequent rains.

We have on the farm now a small herd of Holstein cattle, consisting of 24 head, headed by Strathmore Flood Perfection. During the year, eight cows and six bulls were sold for breeding to farmers.

The Yorkshire herd supplied breeding stock during the season to the extent of 75 gilts and 62 boars. Four sows qualified for Advanced Registry during the year. The flock of Suffolk sheep was cut down considerably during the summer. Fourteen choice ram lambs were sold for breeding in the fall.

REPORT OF SUPERVISOR OF JUNIOR ACTIVITIES AND YOUTH TRAINING

(S. H. GANDIER)

Because of wartime conditions and the fact that many young men on the farms had entered military service, a slackening of interest in rural junior activities was anticipated. On the contrary, not only was public interest well maintained, but in some branches of the work considerable development has taken place during the year. Both the Dominion and Provincial governments have continued to pursue a policy of encouragement toward the junior work, having in mind its eventual contribution to the agricultural war effort and the training of the young people as our farmers of the future. In September, the Department announced its intention to transfer all junior activities to the School of Agriculture at Olds, and plans toward this end are now in progress.

JUNIOR FARM CLUBS

Junior clubs on the whole have enjoyed a very encouraging season. There were 75 clubs in the live stock projects, this being an increase of 29% over 1941. In the grain projects 97 clubs were in operation, an increase of 17%. The stock clubs had an average membership of 19 and grain clubs of 17. Girls were admitted to membership in the grain clubs for the first time, partly due to the fact that in many districts membership of boys was depleted by wartime conditions. A further reduction in wheat clubs was more than counterbalanced by a large increase in barley clubs. A new branch was added to the junior club programme with the organization of six poultry clubs. The table below shows number of clubs and membership in the various projects during the past five years. The figures show a decided slump in 1941, with a quick recovery during 1942:

Livestock Projects:	Number of Clubs					Membership				
	1938	1939	1940	1941	1942	1938	1939	1940	1941	1942
Swine	24	30	30	22	21	655	612	520	353	341
Beef	11	22	26	27	38	292	531	712	625	813
Dairy	10	10	12	9	10	205	258	274	186	167
Poultry					6					96
	45	62	67	58	75	1152	1421	1506	1164	1417
Field Crop Projects:										
Wheat	71	74	78	54	40	1385	1260	1417	896	675
Oats	15	23	18	21	22	240	296	256	396	391
Barley	8	7	6	8	45	124	98	121	92	597
Flax	1	1	2	1		10	9	33	10	
Potatoes	2		1	2		23		13	19	
	97	105	107	83	107	1782	1663	1840	1312	1682

Beef Clubs.

Beef feeding clubs are at present the most popular of all of the live stock projects. This year there were 38 beef clubs as compared with 27 in 1941, and several more clubs were organized in the Fall for the 1943 season. Calves are secured in the Fall and early winter either from home herds or by purchase, and are fed for the production of baby beef. Fairs and sales were held from May 1st to the middle of July, and attracted more local interest than usual. Most of the sales were conducted by auction, but a number of the out-lying clubs were obliged to ship to the open market at Calgary or Edmonton. At Lacombe and Edmonton co-operative fairs and sales,

in which all the clubs of those districts participated, attracted large crowds and many buyers. Most of the sales have the support of commission firms, packing houses and the retail trade, who purchase good quality calves at a premium over the regular market. With an exceptionally strong market during the summer, the beef clubs have experienced one of their most prosperous seasons. Late in July the Wartime Prices and Trade Board placed certain restrictions on the sale of exhibition stock, which may have a depressing influence upon our beef club sales in 1943.

Dairy Clubs.

The number of dairy clubs continues with little change from year to year, being determined to a great extent by the available supply of heifer calves that are suitable for club purposes. Prices asked for calves that are eligible for registration are beyond what club members are able to pay, therefore the major source of supply has been stock a few days old from the Edmonton and Calgary milk sheds that producers are willing to part with rather than to feed for veal. A depot for collecting these calves was established at Edmonton by the Live Stock Branch late in 1941, and through it more than 100 calves have been delivered to club centres. This supply has not been sufficient to meet the requirements of old clubs and of all centres that desire to organize new clubs.

The Dairy Branch has co-operated in the dairy club programme by organizing and supervising club groups for the keeping of home herd production records. Owing to limitation of supervisory services now available, old club members desiring to continue this work and members of new clubs wishing to commence it, will be invited to join the regular Cow Testing Service under the direction of the Dairy Branch.

Contributions of a special nature were made to the dairy club programme during the year as follows: trip of two proficiency winners from each dairy club to the annual convention of the Alberta Dairymen's Association, sponsored by the Association; special prizes donated by the Alberta Branch of the Canadian Holstein-Friesian Association to clubs in which the Holstein breed predominates. The interest thus shown by the organizations mentioned is gratefully acknowledged.

Swine Clubs.

The tendency since the 1940 season has been toward a decline in this branch of club work. In 1942 there were 21 clubs listed as compared with 30 two years ago. As mentioned in last year's report, the objective of raising the standard of hogs to a reasonably high level in most districts has been achieved, and many clubs have well served their purpose in this respect. The fact that the Fall seasons of the past two years have been unfavourable for the holding of swine club fairs because of adverse weather and labour conditions, may be partly responsible for a failing interest in these clubs. In many of the outlying districts, swine clubs as at present conducted could still do an excellent piece of work. A few new clubs are planned for 1943. This Fall, as in 1941, the pigs of several clubs were judged on the farms since it was not possible to hold achievement days when the pigs were finished and ready for market.

Poultry Clubs.

This was the first year for junior poultry clubs in Alberta. The poultry project was added to the junior club programme because of the growing importance of the poultry industry and as a possible aid toward greater poultry production during the war. Six clubs, five in the chicken project and one in turkeys, were conducted at the following points: Paradise Valley, Fedorah, Wasel, Stony Plain, Pincher Creek and Hillspring (turkeys). Organization and supervision was the responsibility of the Poultry Branch and its field staff in co-operation with the District Agriculturists. Four clubs held their fairs in November and December, while two were held over for January, 1943. The results achieved in the first season's work have not been up to the standard that was hoped for, particularly with respect to numbers and quality of exhibits at the fairs. With the experience gained this year, certain improvements in the poultry club programme are planned for next season, and there will be some increase in the number of clubs.

A feature of the poultry club programme which worked out very satisfactorily is the group method used in judging all exhibits. Birds are not placed individually, one following the other according to their individual standard of excellence, but each falls into one of three groups, donated as Grades 1, 2 and 3. The group plan of judging has proved very popular in junior work in the United States and merits consideration for projects other than poultry in this Province.

Grain Clubs.

As the grain clubs are under the direct supervision of the Field Crops Branch, the year's report of this division of junior club work will be found in the report of the Field Crops Commissioner.

Junior Club Judging Contests.

All clubs are privileged to enter a team of two members in the Provincial judging contests, the champions in each project then being entered in the annual Inter-provincial contests held at Toronto under the Canadian Council on Boys' and Girls' Club Work. Each District Agriculturist first selects one team from each club project in his district. These compete at preliminary regional contests, the winners coming together for the finals at the University Farm at Edmonton. This year regional contests were held at the Olds School of Agriculture, the Dominion Experimental Farm, Lacombe and the University Farm. The finals were held at Edmonton on October 9th, and champion teams of the Province were declared as follows:

Seed Judging—Team representing the Bon Accord Grain Club: Frank Chubb and Brock Patton.

Beef Cattle Judging—Team from the Innisfail Beef Club: Allan Morison and Dick Newton.

Dairy Cattle Judging—Team from the Didsbury Dairy Club: Dorothy Bruce and Harvey Stevens.

Swine Judging—Team from the Ferintosh Swine Club: George Campbell and Eldon Graff.

No contests were held in the judging of poultry.

The above-named teams participated in the National Contests at Toronto on November 2nd and 3rd, and made a very creditable showing. The beef team captured first place, retaining for the Province the Beef Judging Trophy emblematic of the Championship of Canada, which the Alberta team had won the previous year.

The seed and swine teams stood third and the dairy team fifth. This is the eleventh year for the National Contests, and during that time Alberta teams have won 11 Canadian Championships, 4 in beef judging, 3 in seed judging, and 4 in swine judging.

Junior Club Week.

A new feature of the 1942 club programme was a short course of one week held at the School of Agriculture, Olds, July 20th to 25th, for the 1941 club proficiency winners, each club being entitled to one delegate. In selecting the winners, the members were scored on all phases of club activities from the beginning to the end of the club year. Total registration was 136, of which number 15 were girls. The cost of transportation and of board and room was met by the various club sponsors as follows: for wheat club delegates, the Alberta Wheat Pool; for the oat clubs, the United Grain Growers, Limited; for barley clubs, the Canada Malting Company; for all stock clubs, the Provincial Department of Agriculture. It might here be mentioned that sponsorship of a new group of grain clubs, the Feed Barley Clubs, was recently assumed by the North-West Line Elevators' Association.

Besides lectures and practical classes in the more important branches of agricultural study, the programme included discussions of current farm problems, with special reference to those brought about by the war, and an appropriate portion of time was devoted to games and recreation. As special guest speaker, the addresses of Mr. R. E. Cameron, Club Leader for the State of Montana, on the work of the 4H clubs were an inspiration to students and staff toward greater endeavour in junior club work in this Province.

At the close of Club Week, the five scholarships of \$75.00 each, offered to club members by the Trustees of the Wheat Board Surplus Trust Fund, were awarded as follows:

Beef Club Championship—Michael Hajash, Brooks.
Dairy Club Scholarship—Walter Baerg, Linden.
Swine Club Scholarship—Harry Ostapiw, Spedden.
Wheat Club Scholarship—Nick Sheptycki, Hilliard.
Oat and Barley Clubs—Harry Wolosuk, Vauxhall.

These scholarships may be applied only to expenses of the first year of the regular course at the School of Agriculture.

The success which attended Club Week this year would warrant its adoption as a permanent event in our annual junior club programme.

The Junior Club Bulletin.

Four issues as usual of the club paper, "The Alberta Junior Club Bulletin," were sent out to a mailing list of all junior club members. "The Junior Club News," issued quarterly from Ottawa by the Canadian Council on Boys' and Girls' Club Work, was also distributed to the Alberta members under same cover.

Junior Radio Broadcast.

By arrangement with the Extension Department of the University, a weekly broadcast of junior club news and talks of particular interest to club members and other young people of rural districts, has been given over the University station CKUA from October to April for the past number of years. This is a fifteen minute programme, and for the present season is scheduled for every Saturday at 11:30 a.m.

DOMINION-PROVINCIAL YOUTH TRAINING PROGRAMME, SCHEDULE "E"

Two projects were continued during the 1941-42 Fall and Winter season under Schedule "E" of the Dominion-Provincial Youth Training Programme. These were courses for a limited number of deserving young men and women at the School of Agriculture, and courses in Farm Mechanics for young men on the farm, held at six country centres. Other projects formerly carried under this schedule, a brief summary of which is given in the annual report for 1941, were discontinued.

Trainees at the School of Agriculture.

During the 1941-42 school term, grants were permitted only to young men and women who had completed the first year course and required financial assistance to continue in the second year. The applications of 10 girls and 7 boys were accepted, and all graduated at the close of the winter term with creditable standing. New regulations provided for a number to be admitted to both the first and second years for the 1942-43 term, and at present seven girls and seven boys are receiving assistance. The amount available is sufficient to pay more than one-half of the expenses for one full term. Including those at present in attendance, a total of 197 have had the benefit of these youth training grants since the first agreement between the Province and the Dominion was entered into in 1937.

The Farm Mechanics Schools.

During the Fall and winter of 1941-42, the short courses in Farm Mechanics at country centres were continued along much the same lines as in the previous year when they were first instituted. They were held for a period of six weeks each, and their object and general set-up are given in some detail in the annual report for 1941. Schools held last winter were as follows:

Centre	Period of Training	Enrolment
Bow Island	November 10th to December 19th	26
Gleichen	November 10th to December 19th	32
Trochu	January 6th to February 13th	24
Castor	January 6th to February 13th	39
Vegreville	February 16th to March 27th	40
St. Paul	February 16th to March 27th	34
Total enrolment		195

These courses were again well received, though registration was lower than in the previous winter, when a similar number of schools were held and 233 attended. With each succeeding year of the war, more and more of the young men of our rural districts have entered the armed services, which definitely accounts for the decreased enrolment noted above.

Scarcity of farm labour and the unusually late harvest this Fall have created conditions that make it unfavourable for the operation of the six weeks schools during the current winter months. No schools were planned to commence in the fall, but an attempt will be made to conduct a number of three weeks schools from January to March 1943, at which only training in the repair of tractors and other lines of farm machinery will be offered. There is a very urgent need for such training since farmers are obliged to prolong the life of their present stocks of equipment as much as possible because of wartime restrictions on the manufacture of all lines of farm machinery and implements.

REPORT OF ASSISTANT SUPERINTENDENT, PROVINCIAL
HORTICULTURAL STATION, BROOKS

(P. D. HARGRAVE)

There are being grown, on the prairies, between one and two thousand varieties of fruits. This is the natural result of the introduction and selection processes that have been carried on by interested growers during the last thirty years. The next few years will still further aggravate the already complicated situation as new varieties are selected from the thousands of seedlings that have been planted within the last decade. It is hoped that the complication will be a happy one, and from the introductions will come earlier, higher quality, hardy fruits. A somewhat similar problem presents itself on a smaller scale with vegetables and ornamentals.

The programme of the Provincial Horticultural Station looks first to the solution of these three problems; and this work at the station plays a very large and important part in each year's undertakings. Each variety that goes into the test plantings is propagated at the station on seedlings grown from seed produced at the station, and a careful record is kept of its behaviour.

Many new varieties have been introduced to the trade in recent years, during which time varieties appearing on recommended lists have, with few exceptions, changed completely. Our aim has been, and is yet, the development of varieties suitable to the production of home fruits. However, commercial production is increasing, particularly in the field of small fruits and crab apples. There are small acreages in Alberta that have been returning good revenues for many years, and at present large plantings are being developed.

Vegetable production is expanding rapidly, particularly production of those vegetables that are finding markets outside of the Province. This is particularly true as it relates to the canning industry, frozen pack, vegetable seed production and fresh vegetable sales. These fields would find helpful a trained specialist, who could devote his time and energy to their problems and aid in expanding their fields.

GENERAL CONSIDERATIONS

The development of the station since the first sod was broken in 1911 with the aim of distributing shelter-belt trees to the new settlers; the collection of native fruits and ornamentals started in 1918; the first plum seeds planted in 1919; the transfer of the land from the Canadian Pacific Railway to the Provincial Government to form the nucleus of the Horticulture Station and Demonstration Farm in 1935; the combining of these two developments as a Provincial Horticultural Station in 1941, have reached another milestone in the construction of an office building and green-house for administration and furtherance of the work in 1942. The new building will afford facilities for storage, processing, investigation and testing that have been badly needed.

During 1942 there were 13,265 man hours of labour hired for general work. This is 849 hours less than the 14,116 man hours employed in 1941, or approximately the full time of one man. The smaller number of man hours worked was due to a number of factors, most important of which was the lack of irrigating and the

higher cost per hour of the labour employed. The latter factor will play a more vital part during the coming year.

During the past year many minor repairs and improvements have been accomplished. A large percentage of the old machinery has been repaired or replaced. New equipment consists of a tractor, a row crop cultivator and a mower. The pea and bean thresher that had been discarded was completely reconditioned. Field cultivators, haying equipment, corn planters and potato handling machinery were completely overhauled.

A programme of summerfallow and row cropping to clean up the fields at the station that are badly infested with couch grass and noxious weeds was carried out. The larger irrigation ditches were cleaned, and the structures and bridges over them replaced. Two of the main roads were changed and graded. In preparation for a new entrance to the farm, and to improve the corner bordering the highway, a large number of trees were cleared; the barnyard area has been improved and refenced. An area set aside as a new machinery yard has been prepared for sowing of grass. Horses are the only live stock on the farm at the present time, and their number has been reduced. More of these will be disposed of during the spring sales.

Considerable repair work is required on farm buildings and structures.

CLIMATE

The weather, a highly important factor in horticultural production, was exceptional during the year 1942. The summer was cold and wet. The moderately long period between killing frosts of 130 days allowed many crops to mature that would otherwise have perished. Some damage was done to vines on the 17th of September, but a killing frost was not experienced until the 25th of September. During the year we had a total of 14.9 inches of moisture. The greater part of this, 9.13 inches, was received during the months of June, July and August. A further 2.3 inches fell in May and 1 inch in September, giving us a total of 12.48 inches during the growing season.

TEMPERATURE RECORD FOR THE YEAR 1942

	Av. Max.	Av. Min.	Max.	Min.	Precipitation
January	38.1	19.9	57	— 3	.25
February	25.3	3.2	43	— 1	.53
March	45.8	20.0	70	6	.39
April	58.5	28.3	79	2	.56
May	62.7	39.09	84	28	2.35
June	70.6	43.3	80	36	3.26
July	84.16	53.8	94	42	3.25
August	77.1	49.7	93	38	2.62
September	68.6	44.2	84	27	1.00
October	59.4	30.1	84	5	.23
November	30.4	12.6	63	— 1	
December	16.7	2.9	49	—18	.46
Total					14.9

A cool summer was also experienced with a maximum temperature of 95° in July. However, April and May had many periods of very warm weather which, following the mild winter, gave us a very early blossom. Nanking cherries (*Prunus tomentosa*) and Flowing almond (*Prunus tenella*) were showing color on April 21st, the early plums on April 29th, and the pears on May 2nd. This warm weather and early blossom were followed by a severe frost on May 16th, which destroyed much of the fruit that had set and all

of the blossoms open at the time. Late blooming varieties were not severely damaged, and set a fair crop.

The warm, mild winter, with no extremely low temperatures, several warm chinooks, and very little snow, left the land dry during the early spring. As a result, irrigating was started on May 8th. This was followed by heavy rains, which water-logged many of the irrigated lands.

The wet weather reduced to a minimum the irrigating that was done during the summer. It did aggravate the weed problem, which taxed to the utmost the station facilities. Due to October being comparatively dry, all the orchards were irrigated before freeze-up.

FRUIT SEASON

Due to frost, harvest of fruit was light, only 8½ tons being marketed. The crop of apples and crab apples was of good quality; plums were lower in quality, due to a higher percentage of the hybrid varieties being frosted at blossom time. More plums would have been harvested had wet weather not interfered at picking time. The market for the harvested fruit was exceptionally brisk, due possibly to the short crop in British Columbia. It is increasingly noticeable each year that customers who once use Alberta fruit for apple and plum jelly give it a preference because of its quality. Commercially processed Alberta fruit, particularly plum and apple jellies, would find a favourable market.

Amongst the new varieties fruiting in the test orchard and marked for wider trial are the crab apples, Brooks No. 20 (formerly known as 4A-12) and Brooks No. 30; and the plums, Morden 101, Minnesota 197, and Minnesota 255. Brooks No. 30 is a very early crab of fair size and good to eat out of hand, while Brooks No. 20 is a large, bright red crab, prolific, and of good canning quality. The plums were not chosen because of their particular high quality, but for their ability to ripen early. The variety Morden 101 is deserving of further trial in the more northerly parts of the Province. One station selection was numbered during the past summer. It is Brooks No. 38, an early, medium sized apple, greenish-yellow in background with a red overlay. This is a very good apple to eat out of hand. A number of other seedlings were marked for further attention in the apple and cherry orchards.

A start has been made towards the replacement of those lost during the previous year because of poor winter storage facilities. There should be no difficulty in maintaining this type of material from now on with the new storage rooms. The cloth house used last summer for the first time as a growing and breeding house proved to be of great help.

Previous to this the station had experienced flowering peach bloom, but this is the first year that a species from which the commercial peach evolved blossomed. Unfortunately, the heavy frost of May 16th destroyed its set. A good crop of Ussurian cherry (*Prunus Japonica*) was harvested for the first time. There were no outstanding seedlings. In spite of the short fruit crop, a very commendable exhibit was gathered together for the Calgary Horticulture Society Exhibition. These exhibits, although they take a great deal of time in their preparation, receive such favourable acclaim by the visiting public that they are justified. Their effect in encouraging people to grow their own fruit cannot be over-estimated. During the year there were 82 tree fruits, 17 small

fruits, 118 types of fruit seed, 40 varieties of fruit propagating material, and 102 ornamentals introduced to the station. This was made up of apples, crab apples, stone fruits, pears, ornamentals and small fruits. Those that had been propagated in 1940 were planted in their respective test orchards, bringing the total of tree fruit varieties to 957.

Of particular note amongst the new introductions were the new hardy mums. There is a wide selection of these, and a few of them have been found to bloom sufficiently early. They are highly recommended to people interested in an attractive fall perennial for their gardens.

TESTS

During adverse years the test plots and experimental work gives those directing them more definite opinions about the success of new varieties or methods than in average or good years. In horticulture, test years are welcomed for this reason. During the past year the efforts of the station staff were directed, after fruit work had been cared for, to fertilizer work with potatoes, potato varietal tests and breeding, soy beans, onions, peas and bean increaser plots, freezer tests, vine growing and the commercial production of strawberry plants for British Columbia growers. Production of best seed, a highly specialized crop, received considerable attention.

Potato Fertilizer Test Plot.

The acreage of potatoes produced in this Province is increasing so as to meet the demands of outside markets. Some growers are using commercial fertilizers. No actual information is available as to the value of the different chemicals applied or as to the rate of application. In an endeavour to investigate the possibilities of fertilizer applications a yield and quality trial was laid down for the first time during the past season.

Definite conclusions cannot be drawn from the preliminary trials. There was an indication that on the lighter soils applications of nitrate and phosphate fertilizers increased the total yield. These same fertilizers increased the yield of Canada No. 1 large potatoes on both light loams and heavy loams, and potatoes fertilized with phosphate improved in baking quality, although there was no marked improvement in boiling tests.

A detailed preliminary report of this test is available in mimeographed form.

Potato Varietal Yield Test.

In order to ascertain which of the early maturing potatoes had the greatest potential ability to yield, six of the most common were planted with the Netted Gem variety as a control. Their yield varied from a low of 11.9 tons to a high of 18.25 tons per acre. Netted Gem stood third at 17.5 tons per acre. The other varieties yielded as shown in Table No. 1.

TABLE No. 1—POTATO VARIETAL TEST

Variety	Yield in lbs.	No. of hills	Distance between rows	Distance between hills	Amt. per acre, tons
Early	288	75	36 ins.	18 ins.	18.25
Vicks Extra Early	284	75	36 ins.	18 ins.	18.0
Netted Gem	277	75	36 ins.	18 ins.	17.5
Carter's Early Favorite	239	75	36 ins.	18 ins.	15.1
Early Ohio	239	75	36 ins.	18 ins.	15.1
*Bliss Triumph	137	50	36 ins.	18 ins.	13.25
Warba	188	75	36 ins.	18 ins.	11.9

*50 hills instead of 75.

Sprouted Potato Yield Test.

Sprouted potatoes of the early varieties planted on May 19th were dug on July 23rd, July 31st and August 7th. Their comparative yields are given in Table No. 2.

TABLE No. 2—SPROUTED POTATO TEST

Variety	1st digging, July 23	2nd digging, July 31	3rd digging, August 7	Total
Irish Cobbler	5.8 lbs.	6.9 lbs.	7.3 lbs.	20.0 lbs.
Warba	5.4 lbs.	7.6 lbs.	10.6 lbs.	23.6 lbs.
Early Epicure	4.9 lbs.	10.2 lbs.	8.6 lbs.	23.7 lbs.
Carter's Early Favorite	3.6 lbs.	6.4 lbs.	6.7 lbs.	16.7 lbs.
Bliss Triumph	2.8 lbs.	6.5 lbs.	8.2 lbs.	17.5 lbs.
401-2-3	2.4 lbs.	4.9 lbs.	6.2 lbs.	13.5 lbs.
Early Ohio	1.8 lbs.	4.6 lbs.	9.4 lbs.	15.8 lbs.
Totals	26.7 lbs.	47.1 lbs.	57.3 lbs.	130.8 lbs.
Averages	3.8 lbs.	6.7 lbs.	8.1 lbs.	

Three varieties, Irish Cobbler, Warba and Early Epicure, gave the highest yield when first dug. At the second digging, Early Epicure showed the greatest gain, but the same three varieties were at the top of the list for yield, although Bliss Triumph was a close fourth. Warba did not give its greatest yield until the date of the third picking, at which time the difference in yield between all of the varieties in the test was not great.

As indicated in previous tests, Early Epicure seems to be the most promising potato variety for early market production if it can be grown without scabbing. Irish Cobbler also has a tendency to scab. Warba, as in previous years, was not the earliest high-yielding potato, although its total yield increased more than the other early varieties toward the end of the early potato season.

Corn.

In the hope of finding a whitekerneled corn suitable for use in the starch industry, the field corn tests were extended. In spite of the extremely cool season that prevented the proper maturing of most corn varieties, one selection has been found that matures well in the field and is high yielding. Its suitability for starch purposes has yet to be tested.

The work directed at developing a white type of blue-snow popping corn has advanced to the point where we have two strains. One is the result of an out-cross to a smallerkerneled, later maturing, white type, and the other from selection within the blue-snow itself.

Onions.

The onion varietal tests were extended. In an endeavour to find a means of producing a suitable sweet Spanish onion to replace the product previously imported, a check was made on seeding and transplanting methods. Field seeded sweet Spanish types matured, but were not of suitable marketable size. Transplants from flats seeded in the greenhouse were tested with imported sweet Spanish onion thinnings from Washington. The transplant onions did not attain the size reached by transplanted thinnings, nor did they mature as early. The transplant thinnings produced a much higher yield of exceptionally large, high quality onions. When producing this type of onion for the market it is necessary to be able to protect them from frosts in suitable drying sheds during the early fall. Their high sugar content makes them very susceptible to injury from early fall frost.

Sugar Beet Seed.

The trial plot used for the production of sugar beet seed planted from stecklings raised in 1941 and carried through the winter under root cellar conditions, produced a satisfactory stand of seed. In spite of the cool, wet season, the seed matured well. The yield of 2,012 pounds was obtained from one acre.

Soy Beans.

The rod row variety tests were destroyed by game birds.

The field tests planted to the varieties of Pagoda and Kabott with fertilizer treatments were matured and harvested. The variety Pagoda was 11 days earlier than Kabott in maturity. The late season caused a great deal of irregularity in ripening, and gave a resultant variation in yield. No definite statement can be made as to the yielding ability of the different varieties due to variation because of irregular maturity, within the Pagoda plots of from 316 to 435 pounds per acre and the Kabott variety from 264 to 724 pounds per acre. Kabott in a normal year would out-yield Pagoda.

Tomatoes.

The tomato varietal test trials, a regular part of the station programme, were again conducted. This year, 22 indeterminate varieties were tested in a separate trial plot from the determinate types, where they were staked and pruned. The cool, wet season, which retarded all warm season crops, made the results of the trials of particular interest. Some varieties which it was hoped would find a place in Alberta horticulture because of their high quality, were definitely cast aside. The determinate types were led by the variety Red Skin. The variety Princess Mary, an indeterminate type, led its test, as it has done in previous years. The five highest yielding varieties with their yields are shown in Table No. 3.

TABLE No. 3—TOMATO VARIETY TEST

Variety	Aug. 29 lbs. ozs.	Sept. 5 lbs. ozs.	Sept. 12 lbs. ozs.	Total for season lbs. ozs.	Yield per acre
Princess Mary	8 4	10 5	13 11	32 4	2.9
Abel	12 9	13 14	5 3	31 10	2.8
Earliana B.S.	2 14	9 6	14 10	26 14	2.4
Earliana Summerland	0 13	13 12	5 3	19 12	1.7
Bestal	1 9	3 5	10 7	15 5	1.3
Red Skin	13 2	15 7	24 7	53 0	4.8
F5 Brooks	9 11	10 13	10 8	31 0	2.8
Hybrid Simonet	2 11	7 12	15 1	28 8	2.3
Bison Reg'd	0 6	9 10	11 9	21 9	1.9
Bison A3	0 3	5 6	10 8	16 1	1.4

Indeterminate: Princess Mary, Abel, Earliana B.S., Earliana Summerland, Bestal;
Determinate: Red Skin, F5 Brooks, Hybrid Simonet, Bison Reg'd, Bison A3.

Strawberries.

Co-operating with the Dominion Horticulturist and the Creston Strawberry Growers, a test was conducted for the production of strawberry propagating material under station conditions for shipment to the Creston area. This met with outstanding success, and it is the hope of the commercial growers in British Columbia that they will be able to interest Alberta growers in the production of disease-free plants for their areas.

General.

Numerous other minor crops were carried under test, including all the newer types of vegetables, and commercial bean varieties. A start was made in the testing of varieties for freezer storage. The results of the latter test will not be available until such time as cooking tests are completed with the stored products.

PROPAGATING AND PRUNING

A good germinating season was experienced, and a large number of seedlings of new strains and species are available for planting to the test plots. A successful budding season was experienced in 1942, and approximately 12,000 buds of fruits and ornamentals were placed. The budding season of 1941 was very poor, and there will only be some 470 whips for the coming year. Cuttings of willows and male poplars were in demand by new settlers to the district. A large number of ornamentals and evergreens were placed in the increaser plots.

Apple test orchards, one, four and five were pruned and the seedling plots were trimmed. The crab apple yield trial plot and the plum varietal test plot will require pruning during the coming season.

EXTENSION

During the past year more and more home owners have been endeavouring to produce their own vegetable requirements. The number of people growing fruit trees is increasing so rapidly that nurserymen are having difficulties in supplying the demands.

There were fewer visitors to the station, due to the restrictions on travelling, but correspondence increased. There were three large field days organized and held on the station grounds, each having in attendance more than 300 people. Many smaller groups met at the station picnic grounds and toured the orchards. The joint series publication No. 2, on Budding and Grafting, was revised and reprinted.

The station staff assisted at 18 agriculture meetings, 16 field days, 34 junior club meetings, and assisted in the planting of four demonstration orchards. There were 10 demonstration orchards planted in the Province, and field days were held in those orchards planted in the spring of 1939. With one exception, these demonstration orchards have done exceedingly well.

Plans were drawn for nine demonstration orchards, four farmsteads and one Illustration Station orchard. Services of the station were made available to two military establishments at their request.

There were 124 shipments of plant material. Thirty thousand spruce were obtained for distribution from the Forest Service, and 20,000 of these were planted on the farms in the district. Between 600 and 700 fruit tree seedlings were disposed of for shelter-belt purposes, and cuttings of willow and male poplar were made available to the farmers.

Considerable time and effort was given by the staff to field work connected with soy bean, sugar beet and commercial beet seed production, as well as to potato problems.

CONCLUSION

We have not as yet found an apple of high quality or long keeping ability that is hardy enough for prairie conditions. There is still much to be hoped for in our search for early maturing, high quality plums and cherries. Pears, apricots and grapes are just finding a foothold in our horticulture. However, the future is very promising, and with continuous tests of promising seedlings, there is little doubt that more suitable varieties will be found. Even at the present time all home owners in Alberta's agricultural areas can grow sufficient fruit to satisfy their own requirements.

The past test summer has eliminated many varieties from the station tests, and has indicated to us that we will have to start many of our breeding programmes again. This is particularly true of the tomato investigations.

The coming year will likely present its problems particularly in relation to labour conditions, and all undertakings will have to be planned with this in mind.

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APR 30 '83		DOE CAM JUN 17 1992
APR 29 RETURN		DOE CAM AUG 11 1992
MAY 31 1990		DOE CAM OCT 14 1992
JUL 09 1990		DOE CAM OCT 18 RETURN
JUL 10 RETURN		
DOE CAM AUG 21 '90		
DOE CAM OCT 02 '90		
SEP 19 RETURN		
DOE CAM JUL 03 '91		
DOE CAM AUG 14 1991		
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SEP 25 RETURN		
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